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Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

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In re)	
)	NO. 14-CRB-0011-SD (2010-13)
DISTRIBUTION OF SATELLITE)	
ROYALTY FUNDS)	
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WRITTEN REBUTTAL STATEMENT OF THE JOINT SPORTS CLAIMANTS

Volume II of III

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ALLENStrategies

TESTIMONY OF JUDITH ALLEN 1998-1999 CABLE ROYALTY DISTRIBUTION PROCEEDING

I. PROFESSIONAL QUALIFICATIONS

My name is Judith Allen. I have had more than ten years of experience in the cable television industry, working for both programmers and cable system operators throughout the 1990s.

From 1989 to 1992, I was employed by USA Network as a senior member of its Affiliate Relations department. USA Network is a cable network that offers primarily movies and syndicated programming to cable systems and DBS operators. In 1992, I joined Century Communications, an operator of multiple cable systems (or MSO) with a total of over one million subscribers. From 1992 to 1995, I was the Vice President of Marketing and Public Affairs for Century. My responsibilities included programming, marketing and public affairs. From 1995 to 1998, I served as Senior Vice President of Marketing and Programming.

In 1998, I accepted a position as Senior Vice President of
Marketing with MediaOne, then the third largest MSO with
approximately five million subscribers. Soon after I joined MediaOne, I
added programming to my area of responsibilities and my title changed
to Senior Vice President of Video. I worked at MediaOne until mid-2000;

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shortly after its acquisition by AT&T Broadband (which has just been acquired by Comcast). I currently provide consulting services to the cable industry. Among my clients are Fox Cable Networks, Women in Cable & Telecommunications and the Cable Television Association for Marketing.

While employed by Century and MediaOne, I worked with local and regional management to optimize their channel lineups to attract and retain as many subscribers as possible. I also had contact with other MSO executives who had programming and marketing responsibilities. In addition, I negotiated affiliation deals with cable networks for carriage. I also was involved in matters that arose as a result of the 1992 Cable Act, including negotiations for retransmission consent and the re-tiering of service offerings to comply with must-carry requirements and rate regulation. My responsibilities at Century and MediaOne required me to be familiar with the different types of programming available to MSOs, the value of that programming to cable operators and cable subscribers, and the various considerations involved in offering programming over cable television systems and deciding how much to pay for that programming.

II. PURPOSE OF TESTIMONY

I am submitting this testimony to the Copyright Arbitration Royalty
Panel on behalf of the Joint Sports Claimants (JSC). I understand that
the proceeding before the Panel involves the compulsory license royalties

paid by MediaOne and other cable system operators to carry distant signals during 1998 and 1999. I also understand that the Panel will divide the royalties among the owners of the programming shown on the distant signals by attempting to approximate what each type of programming would have received in the marketplace if there was no compulsory license.

The purpose of my testimony is to provide the Panel with the views of a cable industry executive who was closely involved in making decisions related to the carriage and valuation of distant signal and other programming throughout the 1990s. I approach the issues before the Panel from the perspective of one who purchased programming services and then marketed those services to cable subscribers. Because I was involved in responding to many of the statutory and regulatory mandates handed down by Congress and the Federal Communications Commission in the 1990s, I also can provide the Panel with insight into the effect of the Cable Act on cable operators and their program offerings.

III. VALUE OF DISTANT SIGNAL PROGRAMMING

I understand that the Bortz Media & Sports Group conducts a survey of cable operators each year to determine the value cable operators place on the different types of distant signal programming. I have reviewed the results of the 1990, 1991, 1992, 1998 and 1999 surveys, which show that cable operators considered sports programming to be the most valuable type of programming on distant

signals during each of these years – followed by movies, syndicated series, news and public affairs programming, non-commercial programming and religious programming.

The results of these surveys are consistent with my experience in the cable television industry. I believe that in 1998 and 1999, as in other years, the live professional and collegiate team sports programming on distant signals was the single most valuable type of distant signal programming. I also agree with the conclusion of the Bortz surveys that had there been no compulsory license, the cable industry would have spent approximately 40% of its 1998-99 distant signal license fees for the live professional and collegiate sports programming on the distant signals that were carried during those years.

I further understand that a previous CARP has criticized the Bortz survey because it required cable system operators to provide relative valuations of distant signal programming in a short telephone conversation, whereas the CARP makes the same assessment after conducting a six-month proceeding. I respectfully disagree with that criticism.

From the cable operators' perspective, sports programming is the most valuable type of distant signal programming because it attracts and retains subscribers to a greater degree than any other type of distant signal programming. Cable systems cannot insert their own advertising into distant signals; thus, the value of a distant signal to a cable system

can be measured only by its ability to attract and retain subscribers. To motivate subscriptions, a distant signal must provide unique programming, not available from other sources, that generates a loyal following. The sports programming on a distant signal – again, to a greater degree than any other type of distant signal programming – provides potential and actual subscribers with precisely that type of unique programming, not available from other sources, that generates a loyal following.

That is particularly true of the sports programming on the superstation WGN during 1998 and 1999 (telecasts of the major league baseball telecasts of the Chicago Cubs and White Sox and telecasts of the NBA Bulls featuring Michael Jordan). WGN has been a very popular distant signal for many years. Prior to 1998, the only other distant signal to reach more households was superstation WTBS. In 1998, when WTBS converted to a cable network, WGN became the most popular and widely circulated distant signal. The sports programming on WGN is the most significant reason that cable operators have imported WGN.

Cable operators perceive sports programming not only as the most valuable type of programming but also as the most costly type of programming. During the 1990s in particular major sports leagues were successful in negotiating very sizeable payments from their rights holders. The costs of these deals were then passed through to cable operators. It became an accepted (but unwanted) fact in the industry

that sports programming is the most costly type of programming.

Indeed, throughout the 1990s the cable industry generally pointed to the high cost of sports programming as a major factor driving increases in subscriber fees.

IV. IMPACT OF THE CABLE ACT

Perhaps the most significant development in the cable industry during the 1990s was the 1992 Cable Act. In addition to re-regulating the price that cable systems could charge to subscribers, the 1992 Cable Act imposed "must-carry" and "retransmission consent" provisions on cable systems. The must-carry/retransmission consent provisions allowed commercial broadcast stations to choose either to force cable systems in their local areas to carry their signals, or, in the alternative, to force cable systems to obtain the broadcasters' consent before carrying their signals. Commercial broadcast stations (other than superstations) also had retransmission consent rights in distant markets. Non-commercial stations could only invoke must-carry rights in their local markets. The must-carry/retransmission consent provisions gave broadcast stations negotiating and economic power over cable systems that they had never enjoyed before.

The 1992 Cable Act had a significant impact on the programming, including distant signal programming, that cable operators carried.

First, the must-carry rules forced many systems to carry over-the-air broadcast stations they had little interest in carrying, such as duplicate

educational stations, religious stations and home shopping stations. Before the must-carry rules were put into place, many systems did not retransmit these stations (even though they were local) to their customers, simply because the cable operators believed that they added little or no value to the system's channel lineup. Thus, for a system at full capacity, the addition of such stations through the must-carry rules meant that the cable system had to drop another channel that a cable system would have valued more highly. From my perspective, the pressure on channel capacity meant that all channels in a system's lineup were subject to re-evaluation.

In determining which channel to drop, the first question for a cable system is which stations *can* be dropped. In their affiliation contracts, many cable networks insist on "no delete" clauses that force cable systems to carry their signal throughout the course of the contract.

Such cable networks were effectively eliminated from the list of channels a Century system could drop. Because a cable system does not carry a distant signal under standard cable network contractual obligations, any distant signal was extremely vulnerable to being dropped, particularly if it did not offer sports programming.

Second, the results of the negotiations mandated by the retransmission-consent rules added to the strain on channel capacity for cable systems. Cable systems generally refused to make cash payments to broadcast stations for retransmission consent rights. After sometimes

onerous negotiations, stations desired carriage more than compensation, and generally agreed to be carried without cash payment, although some received promotional consideration. Those stations that were carried on a distant basis had even less bargaining power with cable systems and often received little or no consideration for their retransmission rights.

In return for retransmission consent for stations owned by networks or large station groups, however, cable systems often agreed to carry new cable networks in which broadcasters had an ownership interest. The carriage of these new cable networks further strained the capacity of many cable systems.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Judith G. Allen

<u>Nov. 27, 2012</u> Date

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Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

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In re)	
)	
DISTRIBUTION OF CABLE)	NO. 14-CRB-0010-CD (2010-13)
ROYALTY FUNDS)	
)	

WRITTEN DIRECT TESTIMONY OF MICHELLE CONNOLLY, PH.D.

December 22, 2016

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I. QUALIFICATIONS

- 1. I am a Professor of the Practice in the Economics Department at Duke University. I received a Ph.D. in economics from Yale University in 1996. After working at the Federal Reserve Bank of New York, I became an Assistant Professor of Economics at Duke University in the fall of 1997. I was promoted to Associate Professor of the Practice in 2006. While on leave from Duke University, I served as the Chief Economist of the Federal Communications Commission (FCC) from 2006 to 2007. I reported directly to the Chairman of the FCC and advised the Chairman and his staff on a variety of topics, including those involving the cable television industry. I returned to Duke University in 2007. In 2008, I was again asked to serve as Chief Economist of the FCC. After my second term at the FCC, I returned to Duke University. In 2012, I was made full Professor of the Practice at Duke.
- 2. I have taught courses on the Economics of Telecommunications Policy, Intermediate Macroeconomics, Graduate International Trade, and Graduate Advanced Macroeconomics, all at Duke University. I also have taught courses on research methods for undergraduate honors students. I have done research on topics involving theoretical and applied industrial economics. Much of my research considers industries in which there is monopolistic competition (as exists in the cable industry). I have published articles in peer-reviewed journals including the *American Economic Review*, the *American Economic Journal: Macroeconomics*, the *Review of Industrial Organization*, the *Review of Network Economics*, the *Journal of Economic Growth*, the *Journal of Economic History* and the *Journal of Development Economics*. I have been awarded a grant from The National Science Foundation, have been invited to speak at the White House, and have testified before Congress. I also have been an invited presenter or panelist on a variety of issues related to telecommunications policy.

3. My curriculum vitae is included as Appendix A.

II. INTRODUCTION AND SUMMARY

- 4. Section 111 of the Copyright Act grants cable system operators (CSOs) a statutory or "compulsory" license to retransmit copyrighted programming on broadcast stations, including out-of-market broadcast stations (distant signals). To qualify for the Section 111 license, CSOs must pay a statutorily-prescribed royalty which is collected by the Copyright Office and then distributed to copyright owners of the "non-network" programming on the distant signals. The purpose of this proceeding is to allocate, among different categories of distant signal non-network programming, the royalties that CSOs paid for their Section 111 licenses to retransmit broadcast signals during the years 2010-13. Those categories are set forth and defined in Appendix A to the Copyright Royalty Board's (CRB) November 25, 2015 Order in this proceeding (Agreed Program Categories).
- 5. Historically, the CRB and its predecessors have allocated cable royalties among the Agreed Program Categories based upon a standard of "relative fair market value." The Supreme Court has stated that "fair market value" is "...the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or sell and both having reasonable knowledge of relevant facts." Because Section 111 allows CSOs (the buyers) to retransmit distant signals without negotiating with copyright owners (the sellers), there is no empirical evidence which shows directly how much would be paid for the programming on those signals in free-market transactions; the sellers are under compulsion to sell for a legislatively mandated amount by virtue of the Section 111 compulsory license.

¹ Notice of Participant Groups, Commencement of Voluntary Negotiation Period (Allocation), and Scheduling Order, Docket No. 14-CRB-0010-CD (2010-13), Ex. A (Nov. 25, 2015) ("November 25 Order").

² U.S. v. Cartwright, 411 U.S. 546, 551 (1973).

Thus, the CRB and its predecessors have considered a variety of different studies that seek to estimate the share of royalties each program category would have received in a hypothetical free market.

- 6. In the last litigated cable royalty allocation proceeding, which involved the 2004 and 2005 royalty funds, the CRB relied primarily upon the results of "constant sum" surveys of CSOs to determine the relative market value of each program category. The market research firm Bortz Media and Sports Group, Inc. (Bortz) designed and supervised the implementation of those surveys. The Bortz surveys asked a random sample of CSO program executives how they would have allocated their programming budgets among the different categories of distant signal programming they actually carried during 2004 and 2005. The CRB found the "Bortz study to be the most persuasive piece of evidence provided on relative value," concluding that "[t]he Bortz intervals certainly mark the most strongly anchored range of relative programming values produced by the evidence in this proceeding." While the CRB adjusted the 2004-05 Bortz survey results to account for other evidence, its final royalty allocations among the Agreed Program Categories tracked those results very closely.
- 7. The Joint Sports Claimants (JSC) have asked that I provide my opinion as to the appropriate economic analysis for allocating the 2010-13 cable royalties among the Agreed Program Categories. For the reasons discussed below, I believe that the CRB should follow the same approach that it adopted in the 2004-05 proceeding. It should rely primarily upon the results of the 2010-13 Bortz surveys to allocate the 2010-13 cable royalties. These results are set forth in a Bortz report entitled "Cable Operator Valuation of Distant Signal Non-Network Programming: 2010-13" (December 22, 2016) (Bortz Report).

³ Distribution of the 2004 and 2005 Cable Royalty Funds, 75 Fed. Reg. 57063 at 57066, 57068 (Sept. 17, 2010) ("2004-05 Distribution Order").

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8. In prior royalty proceedings the CRB also has suggested the use of, or has ascribed weight to, other types of studies to determine relative market values of distant signal programming. This includes a Shapley analysis and studies based upon certain subscriber viewing data and surveys of cable subscribers. As discussed below, I do not believe that a Shapley analysis offers an empirically feasible method of determining relative market value in this proceeding. Nor do I believe that cable *subscriber* viewing data and cable *subscriber* surveys reflect the relative amounts that cable *operators* would pay for the different categories of non-network distant signal programming.

III. ESTIMATING RELATIVE MARKET VALUE

9. I understand that all parties to this proceeding agree with the relative market value standard, which I also believe makes sound economic sense. There is no economic justification for allocating any distant signal program category more or less than it would have received in a free marketplace absent the Section 111 compulsory license. The more difficult question is how best to determine relative market value of each Agreed Program Category given the absence of marketplace negotiations over distant signal programming. In my opinion, the 2010-13 Bortz surveys provide a method for determining relative market value that is superior to other methods considered by the CRB in prior proceedings, *i.e.*, viewing studies, cable subscriber surveys and a Shapley valuation. My opinion finds support in the fact that observable marketplace behavior – as reflected in the studies (including the regression analysis) undertaken by Dr. Mark Israel of the economic consulting firm Compass Lexecon Inc. (Compass Lexecon) – corroborates the 2010-13 Bortz survey results.

A. The 2010-13 Bortz Cable Operator Surveys

- 10. For approximately thirty years, Bortz has conducted an annual survey of CSO program executives to identify how they value programming on the distant signals they carry pursuant to Section 111. Bortz has employed a well-established market research technique, known as a "constant sum" survey, in which each respondent is asked to divide a budget for distant signals among the different program categories. Bortz has employed the same methodology in its surveys for the years 2010, 2011, 2012 and 2013. However, it made certain refinements and improvements in that methodology in response to changes in the law and marketplace and issues raised by the Judges in the 2004-05 allocation proceeding.⁴
- 11. The 2010-13 Bortz surveys are well-designed and carefully constructed to reduce possible limitations of survey methodologies generally. The Bortz surveys collect information from the relevant decision makers, the CSOs themselves, who would have been the buyers in the hypothetical marketplace that the CRB seeks to replicate. The surveys allow for direct estimation of the perceived relative market value of different types of compensable programming carried on distant signals. They pose the same question that the CRB must answer in allocating the 2010-13 cable royalties among the Agreed Program Categories. That question has the additional advantage of asking the respondent about relative cost and value allocation independently of the current regulatory setting; hence, the survey responses are consistent with the relative valuations under a hypothetical market free of the compulsory license.
- 12. Moreover, the use and consistency of the Bortz surveys over the last thirty years provides for a great deal of continuity and confidence in the estimates generated from the current 2010-13 Bortz surveys. A significant advantage of the repetition of the same basic methodology

⁴ Bortz Report, pp. 24-40.

over such an extended period is its time consistency and established reputation and reliability. It affords the ability to update and to improve the survey methodology in response to issues raised in these proceedings and market developments, as was done with the 2010-13 Bortz surveys.

13. Dr. Robert Crandall testified on behalf of JSC in several prior cable royalty proceedings that "the best evidence of valuation of any specific programming type is the data provided by the Bortz survey." His testimony supports the use of Bortz survey results to allocate the Section 111 royalties. Several expert witnesses from a variety of disciplines, representing various claimant groups, have provided comparable testimony in prior proceedings supporting reliance upon the Bortz survey results. The CRB and its predecessors, as well as the federal courts, have likewise found that those results are useful in determining the relative market value of the different categories of compensable programming carried as distant signals.

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Experts testifying on behalf of other claimant groups have also supported the Bortz survey, including: Dr. David Clark, President of KMC Media (1990-92; testifying for Devotionals); Dr. Richard Ducey, SVP of NAB's Research and Information Group (1990-92; testifying for NAB); Dr. William Fairley, President of Analysis and Inference, Inc. (1990-92; testifying for PBS); John Fuller, Director of Research, PBS (1990-1992; testifying for PBS); Paul Much, Senior Managing Director of Houlihan, Lokey, Howard & Zukin, Inc. (1990-1992; testifying for NAB); Dr. Michael Salinger, Associate Professor of Economics, Boston University (1990-1992; testifying for Devotionals); Dr. David Scheffman, Professor of Economics, Vanderbilt University (1990-92; testifying for PBS); Dr. Steven Wildman, Associate Professor of Communications, Northwestern University (1990-92; testifying for NAB).

⁵ Dr. Robert Crandall, Senior Fellow in Economic Studies, Brookings Institution (1998-99), ¶ 18 (JSC Ex. No. 6); see also Dr. Crandall (2004-05), ¶ 16 (JSC Ex. No. 4); Dr. Crandall (1989), pp. 6-7 (JSC Ex. No. 7).

⁶ Other witnesses testifying on behalf of JSC concerning Bortz surveys include Dr. Gregory Duncan, Professor of Economics, University of California - Berkeley (2004-05) (JSC Ex. No. 8); Dr. Joel Axelrod, President of BRX/Global, Inc., a market research firm (1990-92) (JSC Ex. No. 2); Dr. Leonard Reid, Professor of Advertising and Public Relations, University of Georgia (1989) (JSC Ex. No. 14); Dr. Samuel Book, President, Malarkey-Taylor Research (1989) (JSC Ex. No. 3).

⁷ See 2004-05 Distribution Order; *Distribution of 1998 and 1999 Cable Royalty Funds*, 69 Fed. Reg. 3606, 3609-3616 (Jan. 26, 2004) ("1998-99 Phase I Distribution Order") *aff'd Program Suppliers v. Librarian of Congress*, 409 F.3d 395, 402 (D.C. Cir. 2005); 1990-92 Report of the Copyright Arbitration Royalty Panel to the Librarian of Congress at 45-54 (May 31, 1996); *1989 Cable Royalty Distribution Proceeding*, 57 Fed. Reg. 15286, 15292-95 (Apr. 27, 1992).

I agree and believe that the CRB should rely primarily upon the 2010-13 Bortz survey results to allocate the 2010-13 cable royalties among the Agreed Program Categories.

B. Corroboration of the 2010-13 Bortz Survey Results

- 14. In evaluating any survey-based study that measures relative market value, it is important to consider whether the study results are consistent with observable marketplace behavior. To that end, I consulted with Dr. Israel and Compass Lexecon on their regression analyses which relate cable systems' 2010-12 royalty payments to the different categories of distant signal programming they retransmitted during those years. The regressions are comparable to those upon which the CRB and its predecessors relied in prior proceedings. Dr. Israel also analyzed the amounts that cable networks paid to carry sports and other programming analogous to that on distant signals during the years 2010-13. Both of these analyses are consistent with the results of the 2010-13 Bortz Surveys.
- 15. Dr. Gregory Rosston and Dr. Joel Waldfogel completed regression studies in the 1998-1999 and the 2004-2005 proceedings, respectively, on behalf of the National Association of Broadcasters (NAB)/Commercial Television Claimants. The CRB (in 2004-05) and the CARP (in 1998-99) concluded that these studies had certain limitations but nonetheless provided useful information concerning the relative market values of the programming categories on distant signals. In particular, both the CRB and CARP found the regression analyses useful as corroborating the Bortz Survey results.⁸

Distribution Order at 57069.

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⁸ Report of the Copyright Arbitration Royalty Panel to the Librarian of Congress, at p. 21 (October 21, 2003). In the 2004-2005 Final Distribution Order, the CRB found that "...as a result of the manner in which he has conceptualized his model, Dr. Waldfogel's regression coefficients do provide some additional useful, independent information about how cable operators may view the value of adding distant signals based on the programming mix on such signals." 2004-05

- 16. One of the primary constraints with such empirical studies is that they are by definition relying on observed outcomes in the current market which is subject to regulatory constraints, rather than a hypothetical market free of such regulation. Nevertheless, these studies allow for estimation of the relative values of distant signal programming categories based on the offerings of particular programming types. They are helpful in determining the relative market value placed on such compensable programming subject to regulatory constraints. To the extent that these constraints do not unduly impact one programing type over another, it appears reasonable that the relative values estimated in such regressions would also be consistent, i.e., have a similar rank ordering and a similar magnitude of differences in relative market values, as those present without current regulations.⁹ The Bortz surveys ask for relative valuations of compensable programing independently of regulatory structure. To the extent that both approaches lead to similar relative value estimates, that fact would support my view of the appropriateness of using the 2010-13 Bortz survey in estimating the relative marketplace value of different types of programming carried on distant signals.
- 17. The primary consideration underlying specifications in the current and previous regression studies is that while royalty payments are regulated, the choice of whether or not to carry a distant signal is not. Given both the opportunity and direct costs of carrying a distant signal, the decision by a CSO to carry a particular distant signal is an economic choice which reveals the *relative* valuation of programming content to that CSO within its current mix of programming offerings. The key benefit of a regression is that it can parse out the separate

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⁹ Given that the royalty fees for the carriage of distant signals are independent of the programming offered on these distant signals, this seems a reasonable assumption. One might argue that if CSOs could insert advertising on the distant signals that they carry, then certain types of programming might marginally benefit more from the removal of these regulatory constraints. Nevertheless, even with such a possibility, revenue from advertising would remain very small relative to revenue from subscription fees for CSOs and hence the *relative* valuation of programming to CSOs would be unlikely to be greatly impacted.

impact of different types of programming on a CSO's final royalty payments, while controlling for additional independent factors – which are affected by the number and type of distant signals chosen by the CSO as well as the CSO's revenues ("gross receipts").¹⁰

- 18. Dr. Gregory Rosston undertook a basic pooled Ordinary Least Squares regression of minutes of program type carried via distant signals by a cable system in an accounting period on the total royalties paid by that cable system in that same accounting period. Controls include the number of subscribers to a cable system in the previous accounting period, the number of channels carried on the system also in the previous period, the total number of local channels, average household income in the television market in which the cable system operated, a dummy variable for whether or not the cable system pays any royalties at the higher 3.75 percent royalty rate, whether the cable system carries any partially distant signals, and time dummies. For the allocation of the 2004 and 2005 cable royalty funds, Waldfogel follows the same general specification used by Rosston but simultaneously considers cable systems with three different fee levels.¹¹
- 19. Dr. Israel uses a similar specification to Waldfogel but attempts to improve upon the reliability of the regressions primarily by 1) adjusting the minutes on each distant signal to reflect the fraction of subscribers who actually receive that signal on a distant basis, 2) including non-compensable Network Programming minutes as a control variable, 3) assigning

(2004-05) at p. 7 (JSC Ex. No. 18).

¹⁰ Waldfogel explains that "For Form 3 systems, the royalty payment for a bundle of distant signals is the product of the percentage rate (which is determined by the number of DSEs carried and other factors) and the system gross receipts for program service tiers that include broadcast stations. Hence, variation across CSO distant signal royalty payments is directly affected by two basic factors, the number and type of distant signals chosen and the system gross receipts." Dr. Joel Waldfogel

Waldfogel addresses the previous criticism of the Rosston results of parameter instability across study years by allowing the estimated coefficients on minutes to differ in 2004 and 2005. He finds that it is not possible to reject the hypothesis "... that the minutes parameters are equal across years. While the parameter estimates vary across years, the variation is not statistically significant." Dr. Joel Waldfogel (2004-05), Appendix 3, p. 3 (JSC Ex. No. 18).

programming previously categorized as "Mexican" programming into their respective Agreed Program Categories defined by the Judges, ¹² 4) assigning programming on low-power signals to their respective programming categories, ¹³ and 5) using a larger sample both in terms of days sampled in each accounting period, as well as an increase in total observations. ¹⁴

20. The results from Dr. Israel's regression produce estimates for the implied royalty shares by programming type that are highly consistent with both previous regression studies and the 2010-13 Bortz survey results. All four estimate that the four highest value categories of programming are Sports, Program Suppliers, Commercial Television and Public Television.¹⁵ Most importantly, in addition to finding the exact same rank ordering for the top four programming categories as the 2010-2013 Bortz survey, Dr. Israel's study yields estimates that are either squarely within or just slightly outside the range estimated over the three years by Bortz for the top three highest value programming categories.¹⁶ It is quite remarkable that such different empirical approaches are yielding results that are this similar, at least for the higher valuation programming types.¹⁷ Combined, the top three programming types are estimated to be valued at 86.5 percent of the total value of distant signal compensable programming in

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¹² November 25 Order, Ex. A.

¹³ This is particularly relevant since Waldfogel had grouped all low-power minutes, as well as all minutes on signals lacking sufficient data to categorize the programming, into a separate "Low Power" category.

¹⁴ The programming data used by Compass Lexecon cover a total of six accounting periods, *i.e.*, each six-month accounting period for 2010-2012. Programming data are sampled 28 days in each six-month accounting period for a total of 168 days. This is an increase in both the number of accounting periods (6 vs. 4) and an increase in the number of days sampled (28 vs. 21) relative to Waldfogel. Hence the total number of days sampled is 168 compared to 84 for Waldfogel. Still, due to the fall in the overall number of CSOs in the market over time, Compass Lexecon ends up with 5,465 observations, or slightly more than a ten percent increase relative to the Waldfogel regressions.

¹⁵ Dr. Mark Israel (2010-13), p. 21.

¹⁶ Dr. Mark Israel (2010-13), pp. 21-22.

¹⁷ Dr. Israel finds a similar total estimated valuation for the lowest three programming categories of 13.5 percent relative to Bortz's estimated range of around 9 to 13 percent. However, the regression results appear to be placing all of this value onto Public Broadcasting. Dr. Mark Israel (2010-13) pp. 22-23.

Dr. Israel's study. The 2010-2013 Bortz survey estimates that these top three categories were valued within the range of 87.7 percent to 91.5 percent over this same time period.

- 21. I agree with those economists who have testified that regression studies can provide some additional information about the relative CSO valuation of programming categories offered on distant signals that they choose to carry. Regressions allow the simultaneous consideration of many variables that are deemed theoretically relevant to the outcome being considered. This diminishes the risk of omitted variable bias in which a simple correlation between two factors could appear artificially magnified because a relevant factor of influence was not being considered, causing its impact to be artificially and inappropriately captured by the primary variable of interest. Regressions also allow the analysis of actions taken. In other words, given the actual decisions made by CSOs we see their revealed preferences. This yields information on the relative valuation of the addition of programing types to existing CSO offerings *under current regulations*.
- 22. Nevertheless, I have not seen evidence, nor am I aware of any reason to believe, that current regulations would inherently favor one type of programing over another. Hence, the relative valuation of compensable programing types carried on distant signals in regressions using realized data should still be predictive of the relative valuation of compensable programing types carried on distant signals in a hypothetical market free of regulation. I therefore agree with other economists who conclude that such regression studies are relevant to corroborating Bortz survey results to the extent that they find similar rank orderings of estimated relative valuations and to the extent that the regression study estimates appear to be of generally similar magnitudes as those estimated using the 2010-13 Bortz surveys.

¹⁸ See Dr. Gregory Rosston (1998-99) (JSC Ex. No. 15), Dr. Joel Waldfogel (2004-05) (JSC Ex. No. 18), and Dr. Mark Israel (2010-13).

23. In addition to the regression just discussed, Dr. Israel also calculated the average amount spent by cable networks per hour of programming televised and per total household viewing hour for JSC programming versus non-JSC programming during the years 2010-13. While cable networks are not the focus of the current proceedings, and advertising plays a greater role in the cable network market, this measure speaks to the relative marketplace valuation of JSC programming in the general marketplace. From 2010 to 2013, Dr. Israel calculates that those expenditures by the top 25 cable networks were on average around 27 times greater per hour for JSC programming than for all other types of programming. Thus, those networks allocated over 20 percent of their programming expenditures to JSC programming, despite the fact that such programming amounted to only about one percent of total hours of programming transmitted and just under three percent of total household viewing hours. ¹⁹

C. Other Methodologies

1. Shapley Analysis

24. The CRB suggested in the context of recent "Phase II" proceedings that a Shapley valuation would be an optimal economic approach to determining relative market value.²⁰ From a theoretical perspective this approach has great merit. However, in the context of this proceeding, a Shapley valuation is not feasible because the relevant data do not exist. Moreover, even if the data existed, the immense number of potential permutations would pose an obstacle to such an analysis. As the CRB noted in quoting the observations of Professor Richard Watt, "[t]he Shapley model provides a reasonable working solution for regulators.... However, it

¹⁹ Dr. Mark Israel (2010-2013), p. 25.

²⁰ Distribution of 1998 and 1999 Cable Royalty Funds, 80 Fed. Reg. 13423, 13429-13430 (Mar. 13, 2015) ("1998-99 Phase II Distribution Order").

does suffer from a particularly pressing problem – that of data availability.""²¹ Other scholars have similarly concluded that the absence of appropriate data is an obstacle to applying Shapley valuation to industries with bundled products.²²

25. This data problem stems from the fact that a Shapley valuation shares the revenues attributable to a bundle of products based on the expected marginal revenue of each product averaging over all of its possible arrival orders in a bundle. Thus, in order to calculate the Shapley value, one would need to know the revenue possible for every potential bundle ordering combination. Additionally, for any bundle with a significant number of products, the calculation of the exact Shapely value is computationally challenging. For N products there are N factorial (N!) possible orderings of the products. While a bundle of three products would have just six possible orderings, with each addition to the bundle the number of permutations escalates and quickly becomes unmanageable. A bundle of 30 products would have 30!, or approximately 2.65 x 10³² (two hundred and sixty-five nonillion), potential orderings. In view of the vastly larger number of potential components to the bundles of programming assembled by CSOs, the number of possible permutations would be overwhelming, even if measures of the revenue possible for each ordering combination were available. Given that a Shapley valuation is not empirically feasible, alternative approaches are necessary to accurately determine the economically appropriate distribution of cable royalty funds to different claimants.

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²¹ 1998-99 Phase II Distribution Order at 13432, n.33. The CRB further noted the testimony in that proceeding from Dr. Erkan Erdem that "...there was no evidence in the record (or apparently otherwise available) by which one could calculate the Shapley values in this proceeding." *Id.* at 13432.

²² See Shiller, Benjamin and Joel Waldfogel, "The Challenge of Revenue Sharing with Bundled Pricing: An Application to Digital Music" (2009), addressing this issue in the context of songs offered within a bundle to individual consumers.

2. Viewing

26. In previous proceedings some parties have introduced studies based in whole or in part on the viewing and/or volume of carriage of programs as a potential basis for determining the relative value of programming carried on distant signals. In the 2004-2005 Phase I proceedings, the CRB determined that the Bortz survey provides a better measure of the relative value of programming categories than studies based on Nielsen viewing data:

Having carefully reviewed and considered all of the evidence in the record, the Judges find that the values of the program categories at issue among these contending claimants are most reasonably delineated by a range bounded by certain results indicated primarily by the Bortz constant sum survey, to a lesser extent by the Waldfogel regression analysis and, to a slight extent, by the Gruen constant sum survey.²³

Similarly, the CARP in the 1998-1999 Phase I proceeding, in an order adopted by the Librarian of Congress, found "[a]fter considering both the Bortz survey and the Nielsen study" that "the Bortz survey best measured the value of programming."²⁴

27. However, in the context of "Phase II" proceedings (which distribute funds to the various claimants within a single programming category, as opposed to the "Phase I" task of allocating royalties among the Agreed Program Categories), the CRB has stated that viewing-based studies are a useful – albeit "second-best" – measure of value.²⁵ The CRB "found viewership-based methodologies to be an acceptable approach to help determine relative market value of television programs within a single, homogeneous program category."²⁶

²³ 2004-05 Distribution Order at 57065.

²⁴ 1998-99 Phase I Distribution Order at 3609. In affirming that award, the D.C. Circuit ruled that the CARP did not "act unreasonably in declining to rely on Nielsen for direct evidence of viewing, as Bortz adequately measured the key criterion of relative market value. Moreover, as the CARP put it, Bortz 'subsumes inter alia all viewing data that a CSO might consider when assessing relative value of programming groups.'" *Program Suppliers v. Librarian of Congress*, 409 F.3d at 402.

²⁵ 1998-99 Phase II Distribution Order at 13432-33.

²⁶ Order Reopening Record and Scheduling Further Proceedings, Docket Nos. 2012-6 CRB CD 2004-09 (Phase II), 2012-7 CRB SD 1999-2009 (Phase II) (May 4, 2016) (emphasis added).

- 28. As several distinguished economists have testified in prior proceedings, viewership-based methodologies are not a good measure of the relative value of the various categories of distant signal programming.²⁷ There is also a significant and long established academic literature which underscores the economic fallacy of using viewership data to estimate the relative value of programming carried on distant signals.²⁸ I agree with the prior testimony of Drs. Wildman, Crandall, and Crawford that viewership alone does not allow for an appropriate estimation of the relative value of programming carried on distant signals.²⁹ Rather, the Bortz survey provides a far more economically relevant method of estimating the relative value of the Agreed Program Categories carried on distant signals.
- 29. CSOs choose which (if any) distant signals to carry based on maximizing profits from household subscriptions. This means that CSOs will consider both the incremental cost of carrying a distant signal and the incremental revenue from attracting new subscribers to a bundle, retaining existing subscribers, or being able to charge a higher price to existing subscribers. In this context, viewership does not necessarily reflect the willingness to pay on the part of subscribers; intensity of preferences is more relevant. For example, sports fans may be willing to pay much more to watch the games of their favorite team, even if these games are only televised at specific and limited times in a year, than for 100 hours of old sitcoms that they watch while trying to go to sleep. Simple viewing does not represent value for a CSO when choosing to carry a distant signal.

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²⁷ Dr. Steven Wildman (1990-92); Dr. Gregory Crawford Rebuttal Testimony (2004-05); Dr. Robert Crandall Direct Testimony (1998-99) (JSC Ex. No. Ex. 6); Dr. Robert Crandall Rebuttal Testimony (1998-99) (JSC Ex. No. 5); Dr. Robert Crandall (2004-05) (JSC Ex. No. 4).

²⁸ For example, Owen, B. and S. Wildman. (1992). *Video Economics*. Harvard University Press: Cambridge, Mass.

²⁹ Dr. Steven Wildman (1990-92); Dr. Gregory Crawford Rebuttal Testimony (2004-05); Dr. Robert Crandall Direct Testimony (1998-99) (JSC Ex. No. Ex. 6); Dr. Robert Crandall Rebuttal Testimony (1998-99) (JSC Ex. No. 5); Dr. Robert Crandall, (2004-05) (JSC Ex. No. 4).

- 30. While viewership is relevant (although still not the only relevant factor) to *broadcast* stations in selecting content because advertising revenues generally increase with the size of the audience watching a program the calculus is different for CSOs. CSOs receive no advertising revenue from distant broadcast signals, and even if CSOs could insert advertisements into distant signals, the revenues from such advertisements would still be dwarfed by the revenue coming from subscription revenues.³⁰ As such, the perceived intensity of subscriber preferences would continue to hold far greater influence on a CSO's decision to carry a distant signal than would the opportunity for small revenues through advertising.³¹
- 31. Moreover, the economics of bundling suggests that the most profitable addition to a cable system's programming is for content that is *negatively correlated* with content already offered by the cable system.³² The negative correlation across subscriber preferences for programming type is important in this context because it means that when choosing to carry distant signals, CSOs will not only be concerned with average demand for a channel, but also

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Napoli found that 85% of CSO revenues from basic channel offerings come from subscriptions rather than advertising fees. Napoli, P. (2003). *Audience Economics: Media Institutions and the Audience Marketplace*. Columbia University Press: New York. More recently, SNL Kagan reported that in 2010-13 less than 4 percent of total cable television revenue came from net local advertising revenue. *Broadband Cable Financial Databook*, SNL Kagan (2015 ed.). There is no reason to believe that advertising sales on distant signals would be greater than that for cable channels currently earning advertising revenues for CSOs. Hence, the presence of such advertising revenue would have at most a very marginal impact on a CSO's desire to carry a distant signal.

³¹ See Dr. Gregory Crawford Rebuttal Testimony (2004-05) p. 6; Spence, A. and B. Owen, (1977). "Television Programming, Monopolistic Competition, and Welfare." *Quarterly Journal of Economics*. Vol. 91, 103-126; Owen, B. and S. Wildman. (1992). *Video Economics*. Harvard University Press: Cambridge, Mass. (research in media economics on the difference between program content choices under systems which maximize advertising revenue verses systems that are driven by pay-support in TV markets).

³² Crawford, Gregory S. and Ali Yurukoglu. (2012). "The Welfare Effects of Bundling in Multichannel Television Markets." *American Economic Review*, Vol. 102, No. 2, (April), 643-685; Crawford, Gregory S. and Joseph Cullen (2007). "Bundling, Product Choice, and Efficiency: Should Cable Television Networks Be Offered a La Carte?" *Information Economics and Policy*. Vol. 19, 379-404; Dr. Gregory Crawford (2004-05); Carlton, Dennis W. and Jeffrey M. Perloff. (2005) *Modern Industrial Organization*. Fourth Ed. Pearson Addison Wesley, New York; Dr. Steven Wildman (1990-92).

with carrying channels that are different from one another so as to increase the profitability of the subscription bundle.³³ This also suggests that more niche programming will be chosen.³⁴

- 32. Thus, in the context of the economic value of individual programming within a bundle to a CSO, neither simple viewership data nor volume of programming is an appropriate metric for the relative market value of programming on distant signals. As Dr. Steven Wildman has testified, "If anything, ... we would expect that the types of programs accounting for the largest fraction of the viewing audience on distant signals to have the least value to cable systems at the margin. Thus, a viewing measure based on gross percentage shares of household viewing hours would tend to provide results that are *inversely correlated* with the appropriate measures of the relative values of distant signal programs." He underscores this by showing that what "cable systems pay in per-subscriber fees for basic cable networks is not closely correlated with audience size for those networks."
- 33. The economic reality that viewership is not a good metric for the relative value of various categories of programming is further illustrated by Dr. Israel's finding that the top 25

³³ Even within homogeneous programming, viewership is not necessarily a valid measure for relative value to a CSO. For example, consider an individual who likes news and public affairs programming. This individual might prefer MSNBC programming to CNN programming. Yet, for a CSO, if it already provides one of these channels in a given bundle, the addition of the second will have less marginal value to it than if the CSO currently carries neither. This is true even if a particular individual likes one more than the other (or if viewership is generally higher for one than the other) since it is the *marginal* increase in CSO profits that is relevant to its decision to offer the additional programming. Moreover, since it is the intensity of preferences for programs that influence a CSO's ability to attract, retain, and charge higher subscription prices, viewership without true knowledge of preferences is potentially misleading.

³⁴ See Dr. Gregory Crawford Rebuttal Testimony (2004-05) p. 10; Dr. Gregory Crawford (2008) "The Discriminatory Incentives to Bundle: The Case of Cable Television," *Quantitative Marketing and Economics*, Vol. 33, no. 3, 41-78; Dr. Steven Wildman (1990-92).

³⁵ Dr. Steven Wildman (1990-92), p. 9 (emphasis added).

Wildman explains that "the 1990, 1991, and 1992 average license fees per subscriber for ESPN and CNN were substantially higher than USA Network's license fee even though USA Network had higher average prime time ratings and, except for CNN's higher number in the Gulf War year of 1991, higher average 24 hour ratings than either ESPN or CNN." Dr. Steven Wildman (1990-92), p. 14.

cable networks devote almost 23 percent of their programming expenditures to JSC sports programming, although that programming accounts for about 1 percent of those networks' total programming hours and less than 3 percent of their total household viewing hours.³⁷ These results, and Dr. Israel's similar results for his analyses of the TBS and TNT cable networks, demonstrate (in an analogous market) that viewership and volume of programming are not valid measures of the relative value of programming categories, even in a market in which CSOs are able to insert advertising.

3. Cable Subscriber Surveys

34. The CRB's 2004-2005 Phase I determination also considered the results of a constant sum survey of cable *subscribers* and concluded that, although it was "much less useful" than the other evidence of relative value presented to the Judges, it "cannot be totally disregarded." However, it appears that those subscriber survey results did not alter the CRB's awards to any significant degree.

35. The CRB was correct to accord little weight to this cable subscriber survey. A study of cable *subscribers* misses the relevant economic mark because even in the hypothetical market for distant signal programming the buyers would be cable system *operators*. As the CRB has found, it is the Bortz survey that "focuses on the appropriate buyer in the hypothetical market – *i.e.*, the cable operator." Moreover, given that the respondents of the Bortz survey are internalizing their beliefs about subscriber preferences when responding to questions about the relative value of categories of programming, this aspect of the market is reflected in the Bortz survey.

³⁷ Dr. Mark Israel (2010-13), p. 25.

³⁸ 2004-2005 Distribution Order, p. 23.

³⁹ Ibid.

36. Conversely, when considering the preferences of only cable subscribers, all of the other market forces affecting the valuation of programming categories by a CSO are inappropriately ignored. As Dr. Wildman has correctly testified:

While it is the case that CSO and cable subscriber surveys presented to the Copyright Royalty Tribunal in the past showed somewhat similar overall rank-order value assignments by CSOs and subscribers, the two types of surveys do produce different allocations of value among different types of programs. Therefore, in comparing the two types of surveys it is important to remember that from an analytical perspective, the two approaches are not close substitutes for each other. Because CSOs are the purchasers in the relevant marketplace and subscriber demands are filtered through them, the CSO survey results must be considered more primary and as more directly relevant to the determination of appropriate compensation than the subscriber surveys. 40

⁴⁰ Dr. Steven Wildman (1990-92), pp. 7-8.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December <u>20</u>, 2016.

Michelle P. Connolly

APPENDIX A

CURRICULUM VITAE December 2016

DUKE UNIVERSITY

Department of Economics

MICHELLE P. CONNOLLY

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EDUCATION

Ph. D., Economics, Yale University, 1996

M. Phil., Economics, Yale University, 1993

M. A., Economics, Yale University, 1992

B. A., Economics, Phi Beta Kappa, Summa Cum Laude, Distinction in the Major, Yale University, 1990

APPOINTMENTS

Professor of the Practice, Duke University, August 2012

Associate Professor of the Practice, Duke University, Sept. 2006- July 2012.

Chief Economist, Federal Communications Commission, Aug. 2008 – 2009.

Economics Director of Duke in New York: Financial Markets and Institutions Program, Jan. 2007 - June 2009.

Director of EcoTeach, Duke University, Sept. 2007 – July 2008.

Chief Economist, Federal Communications Commission, Aug. 2006 – 2007.

Director of EcoTeach and Assistant Professor of the Practice, Duke University, Sept. 2005 – Dec. 2006.

Assistant Professor, Duke University, Sept. 1997 – Aug. 2005.

Economist, International Research Function, Federal Reserve Bank of New York, Aug. 1996 – 1997.

FIELDS

Macroeconomics, Int'l Trade, Development, Growth, Telecommunications, Media

GRANTS

National Science Foundation, Secure and Trustworthy Cyberspace Medium Grant, "Dollars for Hertz: Making Trustworthy Spectrum Sharing Technically and Economically Viable," 2013-2017

Teagle Grant, Duke University, 2008 Spencer Grant, Duke University, 2006

Arts and Sciences Research Council Grant, Duke University, 1998

Arts and Sciences Research Council Grant, Duke University, 1997

John F. Enders Research Grant, 1995

HONORS AND AWARDS

Howard D. Johnson Trinity College Teaching Prize, 2011

Top 5% of Duke University Undergraduate Instructors, Fall 2009, Fall 2010, Fall 2011. Honorary Faculty Speaker, Duke University Economics Majors Graduation, Spring 2010.

Raymond Powell Teaching Prize, Yale University, 1994 Yale University Dissertation Fellowship, 1995 Ryoichi Sasakawa Young Leaders Fellowship, 1993 Yale University Fellowship, Full Support, 1990-1994

William Massee Prize for Excellence in Economics, (Best Academic Grade Record in Economics), Yale University, 1990
Phi Beta Kappa, Yale University, 1990
Summa Cum Laude, Yale University, 1990
National Merit Scholar, 1987

PUBLICATIONS

"The Digital Divide and other Economic Considerations for Network Neutrality" with Clement Lee and Renhao Tan, *Review of Industrial Organization*. December 2016: 1-18. DOI 10.1007/s11151-016-9554-8

"How Much of South Korea's Growth Miracle Can be Explained by Trade Policy," with Kei-Mu Yi, *American Economic Journal: Macroeconomics*. Vol 7, Issue 4, October 2015: 188-221.

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"Proposed FCC Incentive Spectrum Auctions: The Importance of Re-optimizing Spectrum Use,"

Chapter in Communications Law and Policy in the Digital Age: The Next Five Years. Randolf May 2012.

"Economics at the Federal Communications Commission, 2008-2009: Broadband and Merger Review," with James Prieger, *Review of Industrial Organization*, Nov. 2009, Vol. 35: 387-417.

"Sustaining the Goose that Lays the Golden Egg: A Continuous Treatment of Technological Transfer," with Nelson Sa and Pietro Peretto, *Scottish Journal of Political Economics*, Sept. 2009, Vol. 56: 492-507.

"The Manhattan Metaphor," with Pietro Peretto, *Journal of Economic Growth*, Dec. 2007, Vol. 12, 4: 329-350.

"Economics at the Federal Communications Commission: 2006-2007," with Evan Kwerel, *Review of Industrial Organization*, Nov. 2007, Vol. 31: 107-120.

"Implications of Intellectual Property Rights for Dynamic Gains from Trade," with Diego Valderrama, *American Economic Review*, May 2005.

"Human Capital in the Post-Bellum South: a Separate but Unequal Story," *Journal of Economic History*, June 2004, Vol. 64, 2: 363-399.

"The Dual Nature of Trade: Measuring its Impact on Imitation and Growth," *Journal of Development Economics*, Oct. 2003, Vol 72, 1: 31-55.

"Industry and the Family: Two Engines of Growth," with Pietro Peretto, *Journal of Economic Growth*, March 2003, Vol. 8, 1: 115-148.

"Mercosur: Implications for Growth in Member Countries." with Jenessa Gunther, *Current Issues in Economics and Finance*. May 1999, Vol. 5, no. 7. Federal Reserve Bank of New York.

WORKING PAPERS

"The Evolution of U.S. Spectrum Values Over Time," Michelle Connolly, Nelson Sa, Chris Roark, Azeem Zaman, and Akshaya Trivedi, 2016.

"FCC Spectrum Auction Rules," Michelle Connolly, Repton Salisbury, Akshaya Trivedi and Azeem Zaman, 2016.

"What's on TV? An Analysis of Programming Offered by U.S. Cable and Broadcasting," with Gregory Crawford, 2010.

"Openness to Ideas," with Kei-Mu Yi, 2009.

"North-South Technological Diffusion: A New Case for Dynamic Gains from Trade," with Diego Valderrama, 2006.

OTHER WORK

Op-Ed. Many Reasons to Renew Obama Fast-Track Authority on Trade. *Raleigh News and Observer*, June 10, 2015.

Guest editor. "The 80th Anniversary of the 1934 Communications Act and the Inception of the Federal Communications Commission" *Review of Industrial Organization*: Volume 45, Issue 3 (2014).

"An Analysis of Entry and Exit in the US Broadband Market in Recent Years," with James Prieger, Report to the Broadband Task Force, FCC, 2011.

Book Review on *The Race between Education and Technology* by Claudia Goldin and Lawrence Katz. *Economic History Review*, Vol. 63.3, Aug 2010.

Book Review on *Intellectual Property and Development*, edited by Carsten Fink and Keith E. Maskus. *Journal of Economic Literature*, June 2006, Vol. XLIV, pp. 475-458.

"The Impact of Removing Licenses and Restrictions to Import Technology on Technological Change." Background Report for the World Development Report 2000/2001, July 1999.

TEACHING

Economics of Telecommunications Policy, Duke University, 2012.

Honors Research Seminar, Duke University, 2007 – 2016.

Intermediate Undergraduate Macroeconomics, Duke University, 1998 - 2000, 2002, 2003, 2005, 2006, 2010, 2012, 2014, 2016.

Graduate International Trade, Duke University, 2002, 2003, 2005.

Advanced Graduate Macroeconomics, Duke University, 1997 - 1999.

University Service

Run Spectrum Lab at Duke University with seven undergraduate and two masters lab members. Interviewer for Duke Nominations for Rhodes, Marshall, Mitchell, and Schwarzman Scholarships, Fall 2016.

Vice-President, Phi Beta Kappa, Duke University Chapter, 2014 – present.

Director of Honors Program, Department of Economics, 2007–2008, 2009 – present.

Committee on Members in Course, Phi Beta Kappa, Duke University Chapter, 2009 – present.

Duke Alumni Association Board Member, Sept. 2012 – May 2016.

Faculty Advisor to Duke Fed Challenge Team, 2015.

Duke Library Council, 2012 – 2015.

Duke Faculty-Student Connections Work Group, 2012.

Director of Duke in NY: Financial Markets and Institutions Program, 2007 – 2009.

Co-creator of Duke in NY: Financial Markets and Institutions Program, 2007.

Director of EcoTeach, Department of Economics, 2005 – 2008.

Duke University Academic Council, 2007 – 2008, 2009 – 2010.

Committee on the Undergraduate Experience, Duke University, Fall 2005.

Forum for Excellence in Undergraduate Education, Fall 2005 – Fall 2009.

PRESENTATIONS IN LAST TEN YEARS

Discussant for "The Future of the Internet Ecosystem in a Post-Open Internet Order World" Technology Policy Institute and the University of Pennsylvania Law School's Center for Technology, Innovation and Competition, National Press Club, Washington, DC, January 8, 2016.

Panelist for "Does Platform Competition Render Common Carriage Irrelevant in an IP World?" Progressive Policy Institute, Washington, DC, November 20, 2013.

Panelist for "A Workshop On How To Meet The Information Needs Of Communities." UNC Center for Media Law and Policy, Jan. 20, 2012.

Chautauqua Lecture for Duke University Freshman, 2011 and 2012.

Panelist for Congressional Hispanic Caucus Institute Public Policy Conference, September, 2011

Witness for the Congressional Hearing on "Promoting Broadband, Jobs and Economic Growth Through Commercial Spectrum Auctions." For the Communications and Technology Subcommittee of the House Energy and Commerce Committee. June 1, 2011.

Panelist with Paul Milgrom, Michael Riordan, and Hal Varian for the Presentation of the FCC Spectrum Auction Authority Letter to President Obama. White House. April 6, 2011.

Panelist at the Broadband Breakfast, "Setting the Table for the National Broadband Plan: Collecting and Using Broadband Data," Washington, DC, February 2010.

AAC&U Annual Meeting, "Systematic Improvement of Teaching and Learning Through Experimentation and Assessment," Washington, DC January, 2010.

NBER's Summer Institute 2009, Economic Fluctuations and Growth, Small Working Group, Cambridge, July, 2009.

Systematic Improvement of Undergraduate Education in Research Universities, Duke University, June 12, 2009.

Panelist and Moderator, ACLP Advanced Communications 2009 Summit, Advanced Communications Law and Policy Institute, New York Law School, April 2009.

Keynote Panelist, Wireless Technologies: Enabling Innovation and Economic Growth Conference, Georgetown Center for Business and Public Policy, Washington, DC, April 2009.

Martin H. Crego Lecture in Economics, All College Lecture, "Economics and Public Policy at the FCC," Vassar College, March, 2009.

Forum for Excellence in Undergraduate Education, Kennedy School, March 2009, Nov. 2007, Nov. 2006, Nov. 2005.

"Universal Service Fund Reform," Phoenix Center 2008 Annual U.S. Telecoms Symposium: Telecoms Priorities for the New Administration, Washington, DC, Nov. 2008.

"Intellectual Property Rights and International Trade," Conference on Regional Determinants of Productivity Growth, University of Washington, Oct. 2007.

"Economic Drivers in Policy Formulation," Spectrum Management Conference, Law Seminars International, Washington, DC, Sept. 2007.

Keynote Speaker, "Antitrust Developments in the United States," CRA Int'l Antitrust Conference, Brussels, June 2007.

Keynote Speaker, "Economic Analysis in FCC Decision Making," FCBA and Stanford Institute on Economic Policy Research, April 2007.

PROFESSIONAL ACTIVITIES

Yale Alumni School Committee Volunteer, October 2012 – present.

Board of Academic Advisors, Free State Foundation, July 2011 – present.

Steering Committee Member for NSF funded "Enhancing Access to the Radio Spectrum (EARS) Initiative, Spring 2010.

Consultant to the National Broadband Task Force, 2009 – 2010.

2009 TPRC Program Committee Member: The 37th Research Conference on Communication, Information and Internet Policy, September 2009.

Consultant to the Federal Communications Commission, 2007.

2008 TPRC Program Committee Member: The 36th Research Conference on Communication, Information and Internet Policy, September 2008

LANGUAGES

Fluent in English and French Working Knowledge of Spanish

4019

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

In the Matter of))) Docket No. 2007-3 CRB CD 2004-2005
Distribution of the) Docact No. 2007-5 CKB CB 2007-2005
2004 and 2005 Cable Royalty Funds	3
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REBUTTAL TESTIMONY OF GREGORY S. CRAWFORD

I am Gregory S. Crawford, Professor of Economics at the University of Warwick in the United Kingdom. I received a PhD in economics from Stanford University in 1998. I was an assistant professor at Duke University and an assistant and later associate professor at the University of Arizona. In 2007-08, I served as Chief Economist at the Federal Communications Commission (FCC), an independent federal regulatory agency charged with regulating a number of media and communications industries, including the broadcast and cable television industries. I reported directly to the Chairman of the FCC and advised him and his staff on a number of topics in these industries, including mergers, spectrum auction design, media ownership, network neutrality, and bundling. After my service at the FCC, I joined the Department of Economics at the University of Warwick as a full professor. I am Director of Research for the economics department.

I conduct research on topics in both industrial organization and law and economics. Most of my research has analyzed the cable and satellite television industries. Particularly relevant for this proceeding, I have published extensively at the intersection of these fields, evaluating conditions of demand and supply within the cable television industry and the consequences of regulation on economic outcomes in cable markets as well as measuring the incentives for and consequences of bundling in the industry. When the National Bureau of Economic Research (NBER)

[&]quot;The Impact of the 1992 Cable Act on Household Demand and Welfare," RAND Journal of Economics, v31n3 (Autumn 2000), 422-449; "Monopoly Quality Degradation and Regulation in Cable Television," (with Matthew Shum), Journal of Law and Economics, v50n1 (February 2007), 181-209; "Bundling, Product Choice, and

commissioned a volume analyzing the consequences of economic regulation across a number of American industries, I was asked to write the chapter on cable television.² I have published numerous academic articles in such outlets as *Econometrica*, the *RAND Journal of Economics*, and the *Journal of Law and Economics*. My CV is attached as Appendix 1.

I have been asked by counsel for the Commercial Television Claimants to evaluate the analytical approach reflected in the direct case testimony of Dr. George R. Ford in light of the economic principles that affect the cable television industry. In doing so below, I first explain the economic principles that determine the relative value of the various channels of program content carried by cable television systems, of which the carriage of distant broadcast signals is a special case. I then review and offer my opinions on the expert report submitted by Dr. Ford, including his suggested reliance on the studies also presented on behalf of the Program Supplier claimants by Dr. Arthur Gruen in this proceeding.³

I. CABLE ECONOMICS

A. Distant Signal Basics

Distant signals are broadcast television signals that a cable operator has elected to carry under the compulsory license scheme set forth in Section 111 of the Copyright Act. I understand that the Copyright Act requires cable systems to pay royalty fees in order to carry distant signals and that the amounts of these fees generally depend on the gross receipts the system earns from subscription fees for service tiers that include any television stations as well as the number and type of distant signals it chooses to carry. The royalty fees are distributed to copyright owners for the retransmission of their works on the distant signals that cable operators chose to carry.

I understand that the relevant criterion for allocating cable copyright royalties to copyright owners that has been established by previous proceedings in this matter is that of "relative

Efficiency: Should Cable Television Networks Be Offered A La Carte?," (with Joseph Cullen), Information Economics and Policy, v19n3-4 (October 2007), 379-404; "The Discriminatory Incentives to Bundle: The Case of Cable Television," Quantitative Marketing and Economics, v6n1 (March 2008), 41-78.

² The NBER is a private, nonprofit research organization dedicated to studying the science and empirics of economics. It is the largest economics research organization in the United States. The chapter is titled, "Cable Regulation in the Satellite Era," Chapter 5 in Rose, N., ed., "Economic Regulation and Its Reform: What Have We Learned?" forthcoming, University of Chicago Press.

Neither of these reports submitted on behalf of the Program Supplier claimants addresses the relative market value of music, a program element, in the distant signal market. Accordingly, my rebuttal testimony is focused on the program category claimants and does not address a determination of the Music Claimants' share.

marketplace value."

Of course, because of the compulsory license fees set by the Copyright

Act, there is no explicit market for distant broadcast signals. As a result, previous proceedings in
this matter have concluded that "the Panel's primary objective is to 'simulate [relative] market
valuation' as if no compulsory license existed."

Solution of the compulsory license existed."

A proper economic analysis of the relative market value of the various content categories on distant signals in the absence of a compulsory license must be grounded in an understanding of the economic forces determining outcomes in the cable television industry. In this section of my report, I describe the economic forces generating the supply of and demand for distant broadcast signals. I also describe the implications of this analysis for determining the relative value of alternative program types currently carried on distant broadcast signals.

B. Distant Signal Importation under the Compulsory License Scheme

I understand that stations carried as distant signals are generally not available in the system's local market and that frequently they are imported from relatively nearby markets. Because distant signals are broadcast television signals carried by a cable system, their carriage combines elements of program selection for both broadcast stations and cable systems. In the language of supply and demand, the economic forces governing broadcast station programming decisions determine distant signal supply and the economic forces governing cable system channel selection determine distant signal demand. I discuss each in turn.

Broadcast Station Programming Choice (Distant Signal Supply)

In television markets, commercial broadcast stations select programming to maximize the net advertising revenue they can receive from the audiences they can attract to that programming. Using the same example that Dr. Ford was asked to consider in his testimony, KATV, the ABC affiliate in Little Rock, Arkansas, like other commercial broadcast television stations, selects its programming to maximize the net advertising revenue it can earn by selling audiences in the Little Rock market to advertisers.

^{4 &}quot;Only one distribution criterion appears to have stood the 'test of time' and has served as the principal basis for allocating cable copyright royalties - 'relative marketplace value'", Copyright Arbitration Royalty Panel ("CARP") 1998/99 Report at 9; "The 1990-92 Panel ... concluded that 'market value' is the only logical and legal touchstone," CARP 1998/99 Report at 10.

^{5 1998/99} CARP Report at 10 (citing prior CARP, Librarian, and Court decisions).

⁶ I understand that evidence regarding these general patterns has previously been introduced in this proceeding, including the Statement of Richard V. Ducey, at 7-8 (93% of non-superstation distant signal carriage within 150 miles), Testimony of Jerald N. Fritz (distant carriage of his company's stations in adjacent, generally smaller markets), and Statement of Joel Waldfogel, at 5 (the smaller the market, the fewer the local stations and the more the distant signals the cable system carries).

As further described below, some broadcast stations end up being carried on distant cable television systems. One might reasonably ask, "How does this affect their programming decisions?" The answer is that it doesn't. I understand that the viewing of distant broadcast signals is miniscule, both in absolute terms and relative to local viewing of local broadcast signals, and distant signal audiences would therefore have little or no advertising value. I further understand that broadcast industry witnesses have explained in this proceeding that stations do not and, as a practical matter, could not sell audiences in distant markets to advertisers. Thus, there is no additional advertising revenue that might change the value calculus for a broadcaster's local market programming decisions as a result of distant carriage.

While the specific programming choices made by different TV stations differ due to differences in tastes for programming and audiences across markets, the economic principles underlying these decisions are the same. The result is a set of programming lineups for each of the roughly 1,600 U.S. broadcast television stations. Excluding those stations already available in a cable system's local market, the aggregate of all the stations' respective programming decisions determine the supply of distant broadcast signal content.

2. Cable System Channel Carriage (Distant Signal Demand)

In general, the decisions facing cable systems are more complicated than those facing broadcast stations, for at least three reasons. First, as multi-channel distributors, cable systems must choose many channels to carry, among a wide variety of alternatives. Second, they sell these channels, with few exceptions, to subscribing households in bundles. Finally, and most significantly for my analysis here, cable systems, unlike broadcast stations, can also earn revenue from fees paid by their subscribers for the bundles of channels they offer. In fact, cable systems rely either predominantly or exclusively on subscriber revenue rather than advertising revenue, depending on the type of channel.¹⁰

⁷ I understand that another witness in this proceeding, Dr. Michael Topper, will be presenting an analysis that shows that the viewing to distant signals measured in the MPAA Special Study previously introduced by Program Suppliers in this proceeding represented less than one-half of one percent of all television viewing done in just the cable bouseholds where distant signals were viewed at all.

⁸ I have reviewed the testimony of Commercial Television Claimants witnesses Dr. Ducey and Mr. Fritz in this regard.

⁹ Even if distant cable carriage could somehow have some influence on broadcast station program choices, that influence would presumably already have had its effect, given that stations have been carried as distant signals for decades.

¹⁰ For many cable networks, which offer "local avails" to cable systems that carry the network, cable operators may earn some incremental revenue through local advertising sales in addition to their principal subscription revenues. But for a number of other channels they choose to carry in their basic video service bundles, including distant signals, local television stations, cable networks such as CSPAN, the Sundance Channel, Turner Classic

Carriage decisions are actually simpler in the case of distant signal importation, because cable operators may not insert their own ads in distant signals and therefore cannot benefit from any advertising revenue from the signal. The primary goal of cable systems regarding distant signals is therefore to select broadcast signals that maximize their profits from household subscriptions. They do so by selecting the channels that appeal to households in their market. As part of the selection process, they compare the incremental revenue from carrying a channel to the incremental cost from carrying it.¹¹ The incremental revenue arises from their ability to charge a higher price to existing subscribers for a bundle including that channel, to attract new subscribers to the bundle, or to avoid a loss of subscribers to the bundle. The incremental cost depends principally on the license fee for the signal determined by the rules specified in the Copyright Act.¹²

While the specific choices made by different cable systems differ due to differences in their assessment of the relative tastes for programming among their subscribers and potential subscribers, the economic principles underlying these decisions are the same. The result is a set of chosen distant broadcast signals for each of the roughly 8,000 U.S. cable systems. These decisions reflect the demand for distant broadcast signals.

3. Advertiser versus Pay-Support

As indicated above, a primary difference between programming decisions made by broadcasters and those made by cable systems is the source of revenue on which they rely. While broadcast stations rely exclusively on advertising revenue, cable systems rely either predominantly or exclusively on subscriber revenue. This difference has important implications for the different kinds of content shown on each platform and thus the relative market value of content which is at the heart of this proceeding.

Movies, and some start-up networks, cable operators receive no local advertising revenues at all. Overall, 85% of cable operators' revenues from their basic video channel offerings are from subscription fees rather than advertising sales (Napoli, P., Audience Economics, Columbia University Press (2003) at 17, Table 1.1).

This is a simplification of the system's true decision, but appropriate for the purpose of this proceeding. In practice, cable systems offer multiple services, including Internet access, a menu of bundles of cable channels (typically called Basic/Expanded Basic/Digital Basic/etc.), multiplexed (bundles of) premium channels, video-on-demand, etc. Each of these varies in the amount of physical capacity required to provide the service. In effect, systems try to equate the incremental profit from each unit of capacity across services.

A primary difference between a cable system's carriage decision for any other cable channel as opposed to a distant signal may come from differences in the cost of carriage. By contrast with the statutory royalty fee for a distant signal, the incremental cost of carrying a typical cable channel is the per-subscriber affiliate fee payable to the channel in return for the right to carry it. These are determined in bilateral negotiations between channels (or families of channels, e.g., Disney) and cable systems (or families of systems, e.g., Comcast). More popular networks are able to negotiate for higher fees, with ESPN the highest (among advertising-supported networks) at roughly \$2.60 per subscriber per month in 2005. For purposes of my analysis, I have ignored the cable system's costs of physical acquisition of the channels.

Content distributed on broadcast stations is selected to maximize advertising revenues in the original local market where it is broadcast. Because advertising revenues generally increase with the size of the audience that watches a program, broadcast stations select content to appeal to as broad an audience as possible. By contrast, content distributed as distant broadcast signals on cable systems is selected to maximize subscription revenue. Reliance on subscriber payments means that the perceived *intensity* of subscribers' tastes rather than just the quantity of their viewing will influence the content that is shown. For example, content that gives \$5 in value to one fifth of a market's households could generate twice as much revenue for a cable system than content that gives \$1 in value to one half of a market's households, even if the latter audience were two and a half times the size of the former. This fundamental difference between program content choices motivated by advertising revenues and those motivated by pay-support in TV markets is recognized in a long line of research in media economics.¹³

The important implication of this well-known principle is that, with regard to distant signal carriage by cable television systems, viewing is not value; subscriber payments to cable systems communicate value.

In the sections that follow, I describe the factors that influence the value a cable system obtains from distant broadcast signals. This, in turn, provides further insights into the relative market value of the various content categories being considered in this proceeding.

C. Factors Influencing Cable Carriage Decisions

Much of my academic research in the economics of cable television markets analyzes the incentives cable systems have to bundle program services, including the implications those incentives have for their carriage decisions. As the carriage of distant broadcast signals is just a special case of the more general channel choice problem, the results of this research are directly relevant here.

In a study published in *Information Economics and Policy* in 2007, Joseph Cullen and I simulated outcomes in an "average" cable television market to investigate the relative effects on cable operators and subscribers of the practice of selling channels in bundles. We concluded that

¹³ Spence, A. And B. Owen, "Television Programming, Monopolistic Competition, and Welfare," Quarterly Journal of Economics, v91 (1977), 103-126, Chapter 4 in Owen, B. and S. Wildman, Video Economics, Harvard University Press (1992), Anderson, S. and S. Coate, "Market Provision of Broadcasting: A Welfare Analysis," Review of Economic Studies, v72 (October 2005), at 960-61.

¹⁴ For cable channels in which the cable operator sells no advertising, such as a distant signal, the relative amounts of subscriber viewing have no direct relation to the relative intensity of subscriber preferences, or subscriber willingness to pay. For example, a consumer may be willing to pay much more to watch 3 hours of his favorite football team than to watch 20 hours of old movies. For cable channels for which cable operators can earn both subscription fees and advertising revenue, there is a trade-off between these objectives, and the content selected reflects a mix of the incentives to attract both advertiser and subscriber payments.

"two key factors determine the consequences of bundling on profit and welfare: the difference between marginal cost and mean WTP [Willingness-to-Pay] for [channels] and [negative] correlation in that WTP for [channels]."

The first factor, the difference between willingness-to-pay and costs, is somewhat intuitive. The average willingness-to-pay for a channel is just its "average demand," that is, the average amount households would be willing to spend in order to have access to the channel. This first factor thus simply says that systems are more likely to carry channels for which the average demand is greater compared to the cost they have to pay for such channels. That is, a cable system facing two channels with a cost of \$0.10 per subscriber per month will carry the one for which consumers in its market are willing to spend an average of \$0.30 per subscriber per month before the one for which they are willing to spend \$0.20 per subscriber per month.

The second factor, negative correlation, is more subtle. Negative correlation in this context refers to a situation in which an individual having higher than average tastes for one channel will tend to have lower than average tastes for another. In such settings, it is common to find some individuals preferring one channel over another, while others have the opposite preferences.¹⁶

Negative correlation is critically important to cable system profitability because the great majority of cable channels (and all distant broadcast signals) are offered in bundles. Bundling effectively allows cable systems to charge different prices to different households for the same channel, despite charging the same overall price for the bundle. This "discriminatory" pricing effect increases – and the profit from adopting it generally increases – as the negative correlation in tastes for bundle components increases.

A simple example, adapted from testimony presented in a previous proceeding by Dr. Steven Wildman, nicely demonstrates this effect. The following chart reports the willingness to pay for each of two channels – news and weather – of two different types of subscribers in a cable market. In this example, a Type 1 subscriber would be willing to pay \$4 for a news channel and \$7 for a weather channel, while a Type 2 subscriber would be willing to pay \$7 for a news channel and \$4 for a weather channel.

¹⁵ "Bundling, Product Choice, and Efficiency: Should Cable Television Networks Be Offered A La Carte?," (with Joseph Cullen), Information Economics and Policy, v19n3-4 (October 2007), at 388.

¹⁶ For example, MTV (Music Television) targets its programming to appeal to young adults and Lifetime targets its programming to appeal to adult women. As a result, it would not be surprising if young adults had higher than average tastes for MTV and lower than average tastes for Lifetime, while their mothers had the opposite preferences. That is, there is negative correlation in tastes for MTV and Lifetime across these consumers.

Programming	Type 1 Subscribers	Type 2 Subscribers
News	4	7
Weather	7	4

I suppose for simplicity that there were equal numbers of each subscriber type, and that the cable system paid no affiliate fees (costs) for either channel.

If a cable system were to offer each channel separately, it would charge a price of \$4 per channel, sell both a news channel and a weather channel to each type of subscriber, and earn \$8 per subscriber. But if, instead, the system were to offer a single bundle of both networks, it would charge a price of \$11 for the bundle, sell the bundle to each subscriber, and earn \$11 per subscriber, a 38% increase in profit. Bundling is profitable, in this example, because it lets the cable system implicitly charge the Type 1 subscribers \$4 for news and \$7 for weather and vice versa for Type 2 subscribers. Higher profits can be extracted by the cable operator because the two types of subscribers have relative program preferences (i.e., which program is preferred more than the other) that are opposite. In other words, preferences for news and weather are negatively correlated across these consumers.

A direct consequence of this property is that cable systems have an important incentive to add channels to a bundle for which consumer tastes are negatively correlated with the existing channels in the bundle. The reason can be shown with Dr. Wildman's full example. Reported in the following chart is the willingness to pay for the same two channels plus a new channel – sports – for the same two subscriber types.

Programming	Type 1 Subscribers	Type 2 Subscribers
Sports	14	8
News	4	7
Weather	7	4

Continue to assume an equal number of subscribers of each type and zero affiliate fees. Assume further that the cable system already offered the sports channel (as might be expected in this

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hypothetical given each subscriber type's relatively high valuation for it) and is now deciding to add just one of the two available alternative channels (news or weather).

It would appear at first that as long as there are equal numbers of each consumer type, there would be nothing much to distinguish the news and weather channels. In particular, they have the same average willingness-to-pay of \$5.50 and the same cost (assumed zero). Notice the difference in profit, however, from offering each in a bundle with sports. A bundle of sports and news allows the system to charge a price of \$15, sell the bundle to both types, and earn \$15 per subscriber. A bundle of sports and weather, on the other hand, allows the system to charge a price of only \$12 and earn \$12 per subscriber. Because of the negative correlation between household tastes for sports and news in this hypothetical example, adding the news channel is 25% more profitable to the system.

This basic economic principle about maximizing profits through bundling is both recognized in the academic literature and, in the cable television marketplace, confirmed through my own research.

Indeed, the bundling of cable television channels is frequently used as the canonical example of the profitability of such "discriminatory" bundling in textbooks in Industrial Organization.

Organization.

D. Which Distant Signals?

One can use the insights from this research to predict which distant signals cable systems are most likely to carry as well as what types of content on these signals will have the greatest value. The royalty cost to a cable system of any two distant signals with the same DSE is the same. The first condition, demand less costs, therefore says that cable systems are likely to carry distant signals for which there is the greatest average demand. If people in adjacent markets are more likely to have similar interests than people in very widely separated markets, this may explain at

A Type 1 Subscriber will pay \$18 for a sports-news bundle (\$14 +\$4) but a Type 2 Subscriber will pay only \$15 (\$7 +\$8). To entice both subscribers to purchase the bundle, the cable system will charge the lower amount, \$15, and make total revenues of \$30. With the sports-weather bundle, a Type 1 subscriber will pay \$21 but a Type 2 subscriber will pay only \$12. Again the cable system will prefer to charge the lower amount, \$12, but total revenues in this case would be only \$24.

Adams, J. and J. Yellen, "Commodity Bundling and the Burden of Monopoly," The Quarterly Journal of Economics, v90n3 (1976), 475-498, Bakos, Y. and E. Brynjolffson, "Bundling information goods: Pricing, profits, and efficiency," Management Science, v45n2 (1999), 1613-1630, Crawford, G. and J. Cullen, "Bundling, Product Choice, and Efficiency: Should Cable Television Networks Be Offered A La Carte?," Information Economics and Policy, v19n3-4 (October 2007), 379-404, Crawford, G., "The Discriminatory Incentives to Bundle in the Cable Television Industry," Quantitative Marketing and Economics, v6n1 (March 2008), 41-78.

¹⁹ See, e.g., Carlton, D. and J. Perloff, <u>Modern Industrial Organization</u>, 4th International Edition, Addison-Wesley (2005), Example 10.4, p.325.

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least in part why the majority of distant signals are imported from nearby television markets.²⁰ It cannot, however, suggest which kinds of content are most likely to be chosen.

The second condition, negative correlation, can. In a recent article published in Quantitative Marketing and Economics, I tested the implications of "discriminatory" bundling in cable television markets and measured the effects of negative correlation on bundle demand and profit.²¹ My analysis demonstrated that programming that appeals to niche tastes ("Special-Interest Networks") is more likely to generate tastes that negatively co-vary with tastes for the bundle than programming that appeals to broad tastes ("General-Interest Networks").²² In particular, I allocated the top-15 cable networks according to their programming format and found that special-interest networks are more likely to have a significantly negative "elasticity effect" (i.e. are more likely to negatively co-vary with other networks in the bundle). ²³ The implication of this result for distant signal carriage is that when a cable system compares two distant signals with equal average demand, it will likely prefer the one appealing to niche tastes.

How does this provide guidance for measuring the relative value of distant signal content? It suggests that content that is markedly different from the other content already offered by the cable system is likely to have relatively greater economic value to the cable operator than content that is similar. My research shows generally that programming akin to those I understand are included within the Commercial Television Claimants, Joint Sports Claimants, and Public Television Claimants categories are more likely to be considered niche programming, therefore more likely to be negatively correlated with other content in cable system bundles, and thus more profitable to cable systems than programs akin to those included within the Program Suppliers category.²⁴

²⁰ It may be expected as well that the costs of physical acquisition and transport increase somewhat with distance, but the array of broadcast stations within a 150-mile radius of the cable system may be assumed to entail similar such costs.

²¹ "The Discriminatory Incentives to Bundle; The Case of Cable Television," Quantitative Marketing and Economics, v6n1 (March 2008), 41-78.

²² Id. at 57, 63, 69.

The General-Interest networks were WTBS, USA, TNT, Family, Nashville, and A&E, and the Special-Interest networks were Discovery, ESPN, CSPAN, Lifetime, CNN, Weather, QVC, Learning, and MTV. See Id. at 54, Table 2.

²⁴ Corroborative evidence of these effects is plentiful. For example, the special-interest networks for which I found evidence of negative correlation in Crawford (2008) included a sports network (ESPN), a news network (CNN), and a public-affairs network (CSPAN). Similarly, the FCC found in its most recent Report on Competition in the Video Marketplace that of 101 regional cable channels offered in the U.S., 43 are sports networks and 51 are news networks (Federal Communications Commission (2009), "Thirteenth Annual Assessment on the Status of Competition in the Market for the Delivery of Video Programming (2006 Report)," available at http://www.fcc.gov/mb/csrptpg.html, at 10, 108-110.

There is an unusual implication of negative correlation and cable system value that is worth emphasizing here. Niche programming is the type of content most likely to involve negative correlation of subscriber preferences and thus to be of greater value to cable systems. It also, by definition, appeals to a smaller audience than does general-interest programming. Thus, in subscriber-supported settings like that characterizing the distant-signal marketplace, and in clear contrast to advertising-supported markets, it is quite possible that less viewing is correlated with greater value.²⁵

II. THE FORD REPORT

The Ford report claims to estimate the relative market value of compensable programming by calculating the relative value such programming would purportedly have to a broadcast station selling access to the audiences that watch such programming in the local advertising market.²⁶ He does so by evaluating the typical audience demographics of alternative content types, determining an average price for those audience demographics in the broadcast advertising market, and, based on what he takes as the relative viewing shares of the various content types and on certain adjustments he makes for various program categories, calculating a purported relative value of the various program categories in the broadcast program marketplace.

The focus of my comments is on the conceptual framework put forward by Dr. Ford, not with the details of the implementation of his analysis. There is a fundamental flaw in the conceptual framework he proposes: he focuses his analysis exclusively on the audience (advertising revenue) market, and not at all on the cable (subscription fee) market. This is a surprising, and glaring, omission.

A. Basic Economic Principles

First, as described above, the *only* mechanism by which distant signal importation can currently generate revenue is through payments to cable systems for subscriptions to bundles that include those signals. Even for non-broadcast cable networks, which present a different, partially advertising-based model, the great majority of cable system revenues come from subscriber fees

²⁵ It is difficult to be definitive as there are two effects at work: a mean effect (what I call the average demand) and a correlation effect. Niche programming has less viewing, which suggests but does not imply a lower average demand. If it does have lower average demand, then one must balance that against the positive profit effect of any negative correlation.

^{36 &}quot;In essence, the simulated scenario of market value assumes there is a hypothetical broadcaster in the distant market that airs the same mix of programming as found on the 2004-05 distant signals," Ford Report, fn 10.

rather than advertising revenues.²⁷ It seems unsupportable, therefore, for Dr. Ford to base his analysis on an assumption that in the hypothetical marketplace, the content provided on such signals would *only* be supported through payments from advertisers.

Indeed, later in his own report, Dr. Ford concludes that a hybrid approach combining his preferred approach and that presented in the Gruen subscriber survey would be plausible because it "would acknowledge dual sources of value for distantly transmitted programming – advertising and subscribers."²⁸

As discussed above, it is a matter of long-settled economic principles, confirmed by my own empirical research and that of others, that the incentives and outcomes in the broadcast television programming market and the cable subscription-based market are fundamentally different. Given that Dr. Ford fails to apply or even discuss the economic principles that actually drive demand in the cable system marketplace, it is my opinion that his analysis cannot be relied upon to provide any useful information regarding the relative value of distant signal programming.

B. Dr. Ford's Hypothetical Market

Dr. Ford does not provide a detailed analysis to justify his assumption that the same content currently being offered to households on cable systems via a distant broadcast signal would instead be offered by a broadcast station or locally originated cable channel in the distant cable system's market. Undertaking such an analysis, which I briefly describe below, I conclude that his assumption is unfounded: in the absence of a compulsory license, content currently distributed via cable carriage of a distant broadcast signal will likely continue to be distributed via a distant broadcast signal. The only effect of the absence of a compulsory license would be that cable systems would likely negotiate with broadcast stations over what they would pay instead of paying statutorily-specified fees. There would likely be no change in the program content on those distant signals or in the relative values of those programs from the perspective of the cable operator.

In the absence of a compulsory license, new distribution rights would have to be negotiated for the carriage of content currently distributed on distant broadcast signals. There might also be scope for the inclusion of locally inserted ads within this distant-signal content. I consider each of these changes in turn.

28 Ford Report at 50.

Non-broadcast cable networks are nationally distributed program channels that are offered to multichannel video providers who in turn offer them to subscribers. Examples include ESPN, CNN, USA Network, and A&E.

The Structure of the Hypothetical Transaction.

In the absence of a compulsory license, cable systems in distant markets (e.g., the Mountain Home cable system in the Springfield, Missouri, DMA) would need to negotiate with copyright holders of the content carried on a distant broadcast signal (e.g., KATV, the Little Rock ABC affiliate carried by the Mountain Home system). How might these new transactions be organized?

First, there would likely be some intermediary, i.e., a *channel*, that would negotiate on behalf of the copyright holders. Cable systems are in the business of choosing channels, not negotiating rights with individual programmers. They are unlikely to have the skills for or interest in beginning to do so.

But what channel? Would it be a new low power broadcast station serving the cable system's local market, as Dr. Ford assumes (i.e., a broadcast station operating in the Springfield DMA in this example)? Would it be an incipient cable network? Or would it be the current broadcast station in the distant market that holds the distribution rights in that market (i.e., KATV in Little Rock)?

In my opinion, the market would continue to be organized as it is now, with broadcast stations in distant markets acting as intermediaries on behalf of content providers in negotiations with cable systems outside their local market. A principal reason for my opinion is simple: if there were value to content providers now being carried on distant signals (e.g., the owner of a Program Suppliers program on KATV) of selling that content in a cable system's local market (e.g., to a local broadcast station or a local origination cable channel in Mountain Home), they would already be doing so now.

Taking the example further, if "Razorback Football with Houston Nutt" could garner enough viewers in the Springfield DMA, wouldn't one of the numerous broadcast stations now serving Springfield license that program? The fact that they don't suggests there isn't enough demand by advertisers for access to the audiences in the Springfield DMA that would watch that program. Might there instead be sufficient demand by subscribers for that (and related) programming to justify carrying it in parts of the Springfield DMA? In fact, some residents of Northern Arkansas who reside in the Springfield DMA may very likely have such tastes. Programming supported by subscription fees (and distributed through cable systems) can exploit the intensity of tastes for a small segment of the population.

^{*}Arkansas state residents who reside in out-of-state DMAs are frequently rabid University of Arkansas Razorback fans and have intense interest in viewing any programming about the teams," Fritz testimony, p.4.

How might such content get to the cable system? Would it be distributed by a new cable channel entrant or, as now, via the distant broadcast signal (KATV in Little Rock)? It seems clear it would continue to be distributed by KATV. Creating a new cable channel with the same content as KATV would merely duplicate its costs without providing any additional benefit.

2. The Role of Advertising.

Turning to the second point, is it possible that distant signals might earn advertising revenue in the absence of a compulsory license that forbids the substitution of ads in distant signal retransmissions? I think not, for three reasons. First, as described above, I understand that the viewing of distant broadcast signals is miniscule and would therefore have little or no value in terms of potential advertising revenue. Second, I understand that Nielsen does not report ratings data for distant broadcast stations (e.g., KATV) within a local DMA (e.g., Springfield, MO) unless such ratings reach certain reporting thresholds. In short, without Springfield ratings, KATV would have nothing to sell in Springfield. Finally, I understand that local (DMA-level) audiences are sold in a well-functioning market within each DMA. I understand that advertisers generally budget and make their buys based on the main broadcast stations within a DMA, and would therefore place their purchases intended for the Springfield DMA with Springfield stations that can offer broad coverage in that DMA rather than spending more with KATV for the scattered KATV viewing audiences in the Springfield DMA, even if those audiences did show up in Nielsen's Springfield reports.³⁰

Based on these reasons, I conclude that, in the absence of the compulsory license, content currently distributed on distant broadcast signals would likely continue to be distributed on distant broadcast signals. Instead of earning a share of copyright royalties under the compulsory license, content providers would likely negotiate with a distant broadcast station (e.g., KATV) for a share of any distant signal revenue that it could negotiate with any cable systems (e.g., Mountain Home) wanting to carry it.

C. Dr. Ford's "Hybrid Approach"

Dr. Ford also discusses the subscriber survey evidence that was presented in this proceeding by Dr. Gruen. He describes the survey as presenting "evidence of actual subscriber valuations" and

Of course, even if some advertising revenues associated with distant signal programs were somehow to become available to the cable operator in the absence of the compulsory license, the relative value of such programs to the cable operator would never be determined exclusively by advertising revenues, as Dr. Ford assumes for his analysis. The lion's share of the value of the programming would likely continue to be a consequence of its ability to attract and keep cable subscribers.

that it "arguably attempts to measure market value in the subscription market." Dr. Ford then suggests that an alternative approach to measuring relative market value would be to average the share numbers resulting from his advertising-based approach and the cable subscriber survey. 32

Besides the fundamental flaws in Dr. Ford's own approach, there are also fundamental shortcomings in the cable subscriber survey as a measure of the relative value of distant signal programming categories. First, the survey fails to establish respondents' familiarity with or whether they place any value on distant signal programming at all. Even though subscriber willingness-to-pay would be more relevant than purported advertising revenues in assessing relative value in the cable market, Dr. Gruen's survey instrument does not provide a measure of willingness-to-pay. Suppose someone didn't value any of the programming types offered on a distant signal; indeed suppose she had never seen the signal and was completely unaware of what it carried. Then what relevant information could she possibly provide when asked how she would allocate \$10 among the various programming types?³³ Relative values only have meaning if they are multiplied by a meaningful total.

The Gruen survey also fails to incorporate any measurement of subscriber tastes for other program services, including local stations and cable networks, which precludes the possibility of measuring the effects of correlation in household tastes for channels. As described above, cable systems find it profitable to add channels for which household tastes are negatively correlated with tastes for the existing channels in a bundle. Without such information, a critical component of measuring the relative economic value of programs to cable operators is missing.³⁴

CONCLUSION

The basic economic principles that govern marketplace behavior in the subscription-supported cable industry are clear and well-known. Any determination of relative market value of distant signal program categories should be made with these principles in mind.

³¹ Ford Report at 46, 49.

³² Id. at 49-50.

³³ This issue is not presented in a survey of responsible cable system business officials, because it may appropriately be assumed that if their system carries a distant signal, it has already been identified as having some value to the cable operator.

³⁴ This difficulty is also not present for a survey of cable operators, who aggregate the demand of all the households in their service area in assessing the relative value of distant signal programs in making their own programming decisions.

Exhibit 4019 (Crawford Rebuttal 04-05), Page 16 Docket No. 14-CRB-0010-CD

Dr. Ford's fundamental assumption that content in a world without a compulsory license would be compiled and distributed by a low-power broadcaster local to the cable system is unfounded. Furthermore, his approach of purporting to measure the relative value of distant signal content by reference solely to advertising revenue in the broadcast market is unfounded and misleading given the economic incentives faced by cable operators and the fact that distant signal content is likely to continue to be supported exclusively by subscriber fees, not advertising revenues.

The types of programming chosen by cable operators to attract subscription revenue are fundamentally different from those chosen to attract advertising revenue. Programming targeting special-interest ("niche") tastes is often more profitable to cable systems, because including it in a bundle is more likely to attract and keep new and existing subscribers than programming targeting general-interest tastes.

For these reasons, Dr. Ford's conceptual framework is fundamentally flawed, from the perspectives of both economic theory and market reality. The Copyright Royalty Board should not use Dr. Ford's findings as a basis for allocating royalties from the copyright pool.

Exhibit 4019 (Crawford Rebuttal 04-05), Page 17 Docket No. 14-CRB-0010-CD

Before the COPYRIGHT ROYALTY JUDGES Library of Congress Washington, D.C.

In the Matter of

Distribution of the 2004 and 2005 Cable Royalty Funds Docket No. 2007-3 CRB CD 2004-2005

DECLARATION

I, Gregory S. Crawford, declare under penalty of perjury that the Statement of Gregory S. Crawford presented in the 2004-2005 Cable Copyright Royalty Distribution Proceeding is true and correct.

Gregory S. Crawford

Dated: 11 December 2009

APPENDIX 1

Rebuttal Testimony of Gregory Crawford

Curriculum Vitae

Gregory S. Crawford

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Employment

Professor, Department of Economics, University of Warwick, September 2008-present Chief Economist, Federal Communications Commission (FCC), 2007-2008 Assistant Professor, Department of Economics, University of Arizona, 2002-2008 Visiting Professor, European School of Management and Technology, Berlin, Summer 2007 Assistant Professor, Department of Economics, Duke University, 1997-2002 Visiting Professor, Fuqua School of Business, Duke University, 2000-2001 Lecturer, Department of Economics, Duke University, 1996-1997

Education

Ph.D. in Economics, Stanford University, Stanford, CA, 1998
B.A., Economics with Honors, University of Pennsylvania, Philadelphia, PA, 1991

Publications

"Cable Regulation in the Satellite Era," Chapter 5 in Rose, N., ed, "Economic Regulation and Its Reform: What Have We Learned?", forthcoming, University of Chicago Press.

"Economics at the FCC: 2007-2008," (with Evan Kwerel and Jonathan Levy), Review of Industrial Organization, v33n3 (November 2008), 187-210.

"The Discriminatory Incentives to Bundle: The Case of Cable Television," Quantitative Marketing and Economics, v6n1 (March 2008), 41-78.

Winner, 2009 Dick Wittink Prize for the best paper published in the QME

"Bidding Asymmetries in Multi-Unit Auctions: Implications of Bid Function Equilibria in the British Spot Market for Electricity, (with Joseph Crespo and Helen Tauchen), International Journal of Industrial Organization, v25n6 (December 2007), 1233-1268.

"Bundling, Product Choice, and Efficiency: Should Cable Television Networks Be Offered A La Carte?," (with Joseph Cullen), Information Economics and Policy, v19n3-4 (October 2007), 379-404.

"Monopoly Quality Degradation and Regulation in Cable Television," (with Matthew Shum), Journal of Law and Economics, v50n1 (February 2007), 181-209.

"Uncertainty and Learning in Pharmaceutical Demand," (with Matthew Shum), Econometrica, v73n4 (July 2005), 1137-1174. "Recent Advances in Structural Econometric Modeling: Dynamics, Product Positioning, and Entry," (with J.-P. Dube, K. Sudhir, A. Ching, M. Draganska, J. Fox, W. Hartmann, G. Hitsch, B. Viard, M. Villas-Boas, and N. Vilcassim), Marketing Letters, v16n2 (July 2005).

"The Impact of the 1992 Cable Act on Household Demand and Welfare," RAND Journal of Economics, v31n3 (Autumn 2000), 422-449.

Reports

"Television Station Ownership Structure and the Quantity and Quality of TV Programming," (Commissioned Research Study for the Federal Communications Commission), July 2007.

Articles Under Review

"The Welfare Effects of Bundling in Multi-channel Television Markets," (with Ali Yurukoglu), University of Warwick, May 2009, under revision for re-submission to the American Economic Review.

Working Papers

"The Empirical Consequences of Advertising Content in the Hungarian Mobile Phone Market," (with Jozsef Molnar), University of Arizona, March, 2008.

"Estimating Price Elasticities in Differentiated Product Demand Models with Endogenous Characteristics," (with Dan Ackerberg), mimeo, University of Arizona, March 2007.

"The Welfare Effects of Endogenous Quality Choice: The Case of Cable Television," (with Matthew Shum), mimeo, University of Arizona, March, 2006

"A Virtual Stakes Approach to Measuring Competition in Product Markets," (with R. Michael Black, Shihua Lu, and Hal White), mimeo, University of Arizona, May 2004.

Work In Progress

"Robust Instrumental Variables," (with Dan Ackerberg), mimeo, UCLA, March 2007.

"An Empirical Analysis of Manufacturer-Retailer Interaction: What Determines Wholesale Prices?" (with Zsolt Macskasi), May 2006.

"Storability, Competition, and Sales: Do Firms Cut Prices to Steal Demand from Rivals or Themselves?," (with James J. Anton), April 2005.

"A Dynamic Model of Quality Competition in Subscription Television Markets,"

(with Alex Shcherbakov), March 2007.

"The Impact of Ratings and Word-of-Mouth on DVD Rentals: An Analysis of the Netflix Data," (with Ivan Maryanchyk), February 2007.

Grants

"The Empirical Consequences of Advertising Content" (with Jozsef Molnar), Hungarian Competition Commission, 10,000,000 Hungarian Forint (~\$50,000), 2007-2008

Teaching and Service

Undergraduate Business Strategy, 2009-2010
MBA Strategy, 2006-2007.
Graduate (2nd-year Ph.D.) Industrial Organization, 1996-2005.
Graduate (1st-year Ph.D.) Econometrics, 1998-1999.
Undergraduate Econometrics, 1998-2004, 2009-2010.
Introductory Microeconomics, 1996-1998.
The Economics and Statistics of Sports, 1999

Recruiting Committee, 1997-2002 (Duke University), 2003-2004, 2005-2007 (University of Arizona)

Advising and Placement

Jed Brewer, Tim Davies, Lucas Rosnau, Volodymyr Bilotkac, Kivanc Kirgiz, Yong Cai, Joseph Crespo, Lan Liang, Peter Rankin, Andrew Biehl, Mark Burkey Joseph Cullen

Professional Activities

Associate Editor, International Journal of Industrial Organization, October 2005 - present.

Editorial Board, Information Economics and Policy, December 2007 - present.

Referee for Econometrica, American Economic Review, Review of Economics Studies, RAND Journal of Economics, Review of Economics and Statistics, Quantitative Marketing and Economics, National Science Foundation, International Journal of Industrial Organization, Journal of Industrial Economics, Journal of Applied Econometrics, Information Economics and Policy, Management Science, Southern Economic Journal

2010 Presentations (planned): LBS (1/10), Oxford (3/10), UCL (4/10)
2009 Presentations (inc. planned): ESMT, Berlin (5/09), CEPR IO, Mannheim (5/09),
University of Leuven (9/09), University of Toulouse (Econometrics Workshop and Competition Policy Workshop), (11/09)

2008 Presentations: UK Competition Commission (1/08), Oxford University (1/08), University of Warwick (1/08), University of Virginia (3/08), Industrial

Exhibit 4019 (Crawford Rebuttal 04-05), Page 22 Docket No. 14-CRB-0010-CD

- Organization Society (5/08), NBER Summer Institute, IO Group (6/08), 6th Workshop in Media Economics, Zurich (10/08), Network of Industrial Economics, London (12/08)
- 2007 Presentations: University of Pennsylvania (Wharton, 3/07), ESMT (Berlin, 4/07), Northwestern University (5/07), Bates White Antitrust/Merger Conference (6/07), University of Wisconsin, Madison (10/07), Duke University (Fuqua, 11/07)
- 2006 Presentations: AEA Meetings, Boston (1/06), Columbia (3/06), University of Chicago Marketing (3/06), Bates White Antitrust/Merger Conference (6/06), EARIE Amsterdam (8/06)
- 2005 Presentations: NBER Conferences on Regulation (2/05, 6/05), Econometric Society World Congress, London (8/05)
- 2004 Presentations: Stanford University (3/04), CEPR "The Role of Competition in the New Economy", Greece (5/04), Invitational Choice Conference (6/04), FCC Symposium on 'A La Carte" MVPD Pricing (7/04)
- Conference Organization: Triangle Applied Micro Conference, April 2000, Triangle Applied Micro Conference, May 1999 (co-organizer)

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Before the **COPYRIGHT ROYALTY JUDGES** WASHINGTON, D.C.

In the Matter of)
) CONSOLIDATED PROCEEDING
Distribution of Cable Royalty Funds	No. 14-CRB-0010-CD (2010-13)

REBUTTAL TESTIMONY OF GREGORY S. CRAWFORD, PHD

September 15, 2017

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I. Introduction

I.A. Summary of qualifications and experience

- (1) I am Gregory S. Crawford, Professor of Applied Microeconomics at the University of Zurich in Switzerland. My educational background, experience, and credentials have been presented as part of my Written Direct Testimony submitted in this proceeding on December 22, 2016.
- (2) I have testified three times previously before the Copyright Royalty Board (CRB), first as a rebuttal witness for the Commercial Television Claimants in the 2004-2005 Cable Royalty Distribution Proceeding and later as a direct and rebuttal witness for Music Choice in two separate proceedings regarding the determination of reasonable royalties for the use of sound recording performance rights on "pre-existing subscription services" (PSS), one covering the royalties paid between 2013 and 2017 and the second covering the royalties paid between 2018 and 2022.

I.B. Executive Summary

I.B.1. Scope of Charge

- (3) In this rebuttal report, I have been asked by counsel for the Commercial Television Claimants to undertake two tasks related to determining the appropriate division of cable copyright royalties paid by cable systems for retransmission of distant signals during 2010-2013. The first is to evaluate the premise underlying the direct testimony of a number of witnesses presented on behalf of the Program Supplier claimants that viewing behavior is an appropriate measure of value. These witnesses include Dr. Jeffrey S. Gray, Ms. Sue Ann R. Hamilton, and Mr. Jan Pasquale.
- (4) The second task I was asked to undertake is to evaluate the arguments of Dr. Erkan Erdem, a witness presented on behalf of the Devotional Claimants, about the usefulness of "Waldfogel-type" regression analyses in measuring the relative value of programming represented by the various claimant groups.

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See In the Matter of Determination of and Terms for Preexisting Subscription and Satellite Digital Audio Radio Services, Docket No. 2011-1 CRB PSS/Satellite II. And In the Matter of Determination of Royalty Rates and Terms for Transmission of Sound Recordings by Satellite Radio and "Preexisting" Subscription Services (SDARS III), Docket No. 16-CRB-0001 SR/PSSR (2018-2022).

I.B.2. Summary of Opinion

(5) Based on my experience and expertise, and on my review and analysis of the written testimony of the witnesses identified above, it is my opinion that (a) viewing is not a useful or appropriate measure for determining the relative value of programming on distant signals retransmitted by cable operators, and (b) Dr. Erdem's criticisms of regression approaches as a measure of such relative value are erroneous and should not be credited. I provide support for these conclusions in the remainder of this testimony.

II. Viewing is not an appropriate basis for determining the relative value of alternative programming types carried on distant broadcast signals

- (6) Three Program Supplier witnesses provided direct testimony advocating for the use of relative amounts of viewing by consumers of distant signal programming as the preferred measure of the relative value of that programming in this proceeding.
- (7) In Section II.A, I summarize Dr. Gray's arguments in favor of viewing-as-value. In Section II.B, I explain why this approach is faulty. Importantly, Dr. Gray uses the wrong framework: the right framework seeks to measure cable operators' relative market value for different types of programming. Using consumer viewing choices, as Dr. Gray does, is wrong because relative amounts of consumer viewing don't measure relative consumer value and, even if they could, relative consumer value isn't equivalent to relative cable operator value. In short, viewing isn't value, particularly in the context of cable distant signal carriage.
- (8) In Section II.C, I consider the evidence in support of viewing-as-value put forward by Dr. Gray, Ms. Hamilton, and Mr. Pasquale. I explain that while consumer viewing might conceivably be seen as an *input* into consumer value, it doesn't *equal* consumer value (much less cable operator value) and that even a fundamentally transformed hypothetical market for the rights at issue in this proceeding would not be driven by distant-signal advertising revenue (as suggested by Ms. Hamilton and Mr. Pasquale).
- (9) In Section II.D, I rebut claims by Dr. Gray that viewing data are the only data available to evaluate relative marketplace value, and describe how data regarding the royalties actually paid by CSOs for the carriage of existing distant broadcast signals and/or survey responses from CSOs regarding the relative value of different types of programming carried on distant signals, used by many other experts in this and previous proceedings, are the correct data from which to do so.

II.A. A summary of Dr. Gray's arguments for the use of relative viewing as a measure of relative marketplace value

(10) In his written direct testimony, Dr. Gray presents estimates of the relative value of the alternative programming types carried on distant broadcast signals based on estimates of the relative share of viewing of each programming type by cable subscribers.² The Program Suppliers claimant group

² Written Direct Testimony of. Jeffrey S. Gray, Ph.D. In re Distribution of Cable Royalty Funds, No. 14-CRB-0010-CD (2010-13) (filed December 22, 2016, amended March 9, 2017, corrected April 3, 2017) (hereinafter "Gray WDT"), ¶38-39 and Table 2.

- uses Dr. Gray's estimates as the basis for their proposal regarding the share of the total compulsory license pool that should go to Program Suppliers.³
- (11) In this subsection, I focus on the errors of economic logic underlying Dr. Gray's approach. Beyond those errors, I understand that another CTV rebuttal witness, Dr. Chris Bennett, will demonstrate flaws in Dr. Gray's source data, sampling design, and statistical analysis used to impute distant viewing that would invalidate his approach even if it stood on solid economic foundations.
- (12) The core of Dr. Gray's economic logic is presented in paragraph 13 of his written direct testimony. Here he says:
 - (Gray1) "It is axiomatic that consumers subscribe to a CSO to watch the programming made available via their subscriptions."
 - (Gray2) "The more programming a subscriber watches, the happier the subscriber is, and the more likely she will continue to subscribe, all else equal."
 - (Gray3) "Therefore, a measure of the happiness, or `utility,' an individual subscriber gets from a specific program is the number of minutes that subscriber spent viewing the program offered to him or her by the [Cable System Operator (CSO)]. A measure of the utility all subscribers get, in total, from a specific program is the total level of subscriber viewing of the program."
 - (Gray4) "Thus, even though CSOs are the buyers of the programming bundles, a reasonable measure of the relative market value of a retransmitted program is the relative level of subscriber viewing of that program."
- (13) Based on this framework, Dr. Gray then estimates the relative viewing of the programming offered by each of the claimant groups carried on a sample of distant broadcast signals.⁴ He concludes, "[M]y analysis indicate[s] that relative program viewership provides a reasonable and reliable measure of the relative economic value of distantly retransmitted programing... and determine what I believe to be reasonable and reliable relative market values of the 2010-2013 claimant categories."⁵

³ Compare Gray WDT, Table 2 and Errata to Amended and Corrected Written Direct Statement Regarding Allocation Methodologies of Program Suppliers, *In re Distribution of Cable Royalty Funds*, No. 14-CRB-0010-CD (2010-13) (filed December 22, 2016, amended March 9, 2017, corrected April 3, 2017) (hereinafter "Program Supplier's WDS"), p. 2.

⁴ Gray WDT, ¶¶30-39 and Table 2.

⁵ Gray WDT, ¶40.

II.B. Dr. Gray's use of relative viewing to value programming is simply wrong, as it doesn't reflect the economic environment in which cable systems make decisions about distant signal carriage

II.B.1. Distant Broadcast Signal Economics Redux

- (14) In Section II of my direct testimony, I described the economic incentives governing the decisions of cable system operators (CSOs) to carry distant broadcast signals on their systems. Those incentives are instrumental for understanding why Dr. Gray's approach of determining relative marketplace value as the relative viewing of alternative programming categories is simply wrong.
- (15) In my direct testimony, I explained three fundamental characteristics of the cable distant signal market. First, CSOs earn the vast majority of their video revenue from the sales of monthly subscriptions to households, which enable those households to watch any of the programming carried on a bundle of cable networks.⁷ These bundles include local broadcast signals (channels), distant broadcast signals, and so-called "cable networks." CSOs earn only a relatively small amount of revenue from the sale of advertising on cable networks.⁸
- (16) Second, if a CSO cannot earn revenue from advertising on a channel that it carries, then it will choose to carry that channel primarily in order to attract and/or retain subscribers. Since this is the case for distant broadcast signals, the primary incentive CSOs can have to carry them is to attract new subscribers or retain their existing subscribers. Since this is the case for distant broadcast signals, the primary incentive CSOs can have to carry them is to attract new subscribers or retain their existing subscribers.
- (17) Third, when deciding which channels to carry in order to attract and retain subscribers, two factors are likely to be paramount to CSOs:
 - The first is the difference between households' average willingness-to-pay (WTP, a.k.a. "average consumer value") for a channel and its cost to CSOs. 11 Because the cost for any two distant signals that have the same DSE is the same, when facing a

⁶ See Written Direct Testimony of Greg Crawford, Ph.D. In the Matter of Distribution of Cable Royalty Funds. No. 14-CRB-0010-CD (2010-13) (filed Dec. 22, 2016, corrected April 11, 2017) (hereinafter "Crawford WDT"), Section II, ¶¶ 17-43

NL Kagan reports that between 2010 and 2013, CSOs earned between 93.5% and 94.3% of their video revenue from subscriptions, with the remainder coming from advertising. *Source:* SNL Kagan, Industry aggregates for CSO revenue breakouts, Raw data sourced via SNL by request, provided 9/6/2017.

⁸ See Id.

⁹ Crawford WDT, ¶21.

¹⁰ Crawford WDT, ¶¶37-38.

¹¹ Crawford WDT, ¶¶22-24.

- choice between two such signals, systems will carry the one that has the highest average value to subscribers and potential subscribers. 12
- The second is the extent of negative correlation in consumer WTP for a distant signal relative to the other channels the CSO has in its bundle.¹³ In my research, I have previously found that programming that serves niche or special-interest tastes (including news, sports, and weather content) is more likely to generate willingness-to-pay that is negatively correlated with tastes for programming already carried in cable system bundles. The results of my econometric estimation in this case, finding higher values-per-minute for the Sports, Commercial Television, and Canadian claimants, support these conclusions.¹⁴
- (18) The value to cable operators highlighted in these two factors reinforces a general principle in economics: cable operators are likely to value programming that is *differentiated* from the other programming they include in their cable bundles.¹⁵ Much like a good fixed-price buffet has many possible things to eat, differentiated programming is more likely to match the varying interests of subscribers and potential subscribers than undifferentiated programming and, if consumers value programming about their own interests, cable operators will also value them. ¹⁶ This is particularly true of *exclusive* programming that is highly valued by consumers as, by definition, no other channel can offer it.
- (19) These economic principles can therefore inform how CSOs are likely to value the programming categories carried on distant broadcast signals based on an analysis of how likely such programming is to be differentiated from other programming offered on CSOs' cable bundles. For example, live sports programming is both highly differentiated and is often of high interest to consumers, and thus likely to be highly valued by cable operators.¹⁷ By contrast, nationally distributed public and

¹² Crawford WDT, ¶¶38-39.

¹³ Crawford WDT, ¶¶25-34.

Crawford WDT, ¶¶42-43. This effect is further supported by the long-standing theoretical literature in media economics analyzing the different types of programming selected under advertising versus pay support. For example, Chae & Flores (1998) show that broadcast stations, or "broadcasters," are more likely to select programming that generates an "extensive" market, i.e. one in which audience sizes are large but viewers' willingness-to-pay for programming are relatively low, whereas pay-tv providers, or "narrowcasters," are more likely to select programming that generates an "intensive" (what I would call "niche") market, i.e. one in which audience sizes are small but viewers' willingness to pay for programming are relatively high. See Chae, S. and Flores, D. Broadcasting versus narrowcasting. Information Economics and Policy, 1998, Vol 10, Issue 1, 41-57.

See, for example, Besanko, D., Dranove, D., Shanley, M., and Schaefer, S. Economics of Strategy, third edition. John Wiley & Sons, Inc., 2004. Pp. 214-216.

Furthermore, because potential subscribers don't already subscribe, differentiated programming that is valuable to potential subscribers is likely to be negatively correlated with those potential subscribers' tastes for the existing components of cable bundles.

Similarly, live station-produced newscasts from a different, often larger, television market are differentiated from newscasts on local market stations to the extent they cover different cities or states and sports teams that may be of regional significance in the distant cable community. Written Direct Testimony of Marci Burdick, *In the Matter of*

devotional programming, while differentiated from other programming *in general*, may already be provided on existing local broadcast signals carried by CSOs; if so, they are unlikely to be differentiated and are likely to be of lower relative value. This is also likely for the general entertainment content represented by the Program Suppliers; such programming is also likely to be available on existing local broadcast signals. As such, it is also likely to be of lower relative value to CSOs.

(20) In summary, both economic logic and academic research based on market data show that CSOs find that programming appealing to narrow tastes, programming differentiated from what is already available on cable bundles, and programming not available on other channels included in cable operators' existing bundles, is likely to be of value in attracting and retaining subscribers, regardless of how extensively it may be viewed.

II.B.2. Dr. Gray's transition from a cable-operator-value framework to a consumer-viewing framework is fatally flawed

- (21) Comparing Dr. Gray's analysis to the incentives facing cable operators when making distant signal decisions summarized above reveals the flaws in his approach. In his description of how one should determine relative marketplace value in this proceeding, Dr. Gray correctly focuses on cable system operators (CSOs).¹⁸ He furthermore articulates, again correctly, that "CSOs base their channel and carriage bundling decisions on attracting and retaining subscribers."¹⁹
- Dr. Gray then claims, mistakenly, that "sufficient data are unavailable to properly model CSOs' buying decisions." As is evident in my own direct testimony, the direct testimony of Dr. Mark Israel and Mr. James Trautman on behalf of the Joint Sports Claimants, and testimony by Drs. Joel Waldfogel and Gregory Rosston in previous proceedings²¹, there indeed *is* data available to model CSOs' buying decisions, in the form of both royalty payments made by CSOs for the carriage of existing distant broadcast signals and survey responses from cable system operators regarding the types of content they value when making their distant signal carriage decisions (e.g. the current and

Distribution of Cable Royalty Funds, No. 14-CRB-0010-CD (2010-13)(filed Dec. 22, 2016), ¶¶5, 7, 17., and Written Direct Testimony of Jerald N. Fritz, In the Matter of Distribution of the 2004 and 2005 Cable Royalty Funds, Docket No. 2007-3 CRB CD 2004-2005 (filed Jun. 1, 2009), pp. 2-5.

¹⁸ Gray WDT, ¶11.

While Dr. Gray doesn't explicitly say so, CSOs cannot benefit in any way from advertising carried on distant broadcast signals (Crawford WDT, ¶21, 37-38). I discuss why CSOs carrying distant signals would also not expect any advertising revenue even in a fundamentally transformed hypothetical market in Section II.C.2 below.

²⁰ Gray WDT, ¶12.

See Written Direct Testimony of Dr. Mark A. Israel, In re Distribution of Cable Royalty Funds, No. 14-CRB-0010-CD (filed Dec. 22, 2016) (hereinafter "Israel WDT""), Written Direct Testimony of James M. Trautman, In re Distribution of Cable Royalty Funds, No. 14-CRB-0010-CD (filed Dec. 22, 2016) (hereinafter "Trautman WDT"), Written Direct Statement of Gregory Rosston, In the Matter of Distribution of 1998 and 1999 Cable Royalty Funds, No. 2001-8 CARP CD 98-99, (Feb. 14, 2003), and Written Direct Statement of Joel Waldfogel, In the Matter of Distribution of the 2004 and 2005 Cable Royalty Funds, No. 2007-3 CRB CD 2004-2005 (Jun. 1, 2009) (hereinafter "Waldfogel WDT").

previous Bortz surveys). In Section II.D below, I discuss this error in greater detail, and explain why using such CSO-focused data is a valid and preferable approach for inferring the relative market values of the programming carried on distant broadcast signals.

- (23) Dr. Gray then makes a second error, which leads to his erroneous conclusion. He articulates the views summarized in Paragraph (12) above, starting from the premise that consumers value a subscription to a bundle of programming in order to view that programming, but arriving at a conclusion that "a reasonable measure of the relative market value of a retransmitted program is the relative level of subscriber viewing of that program."
- (24) In making this leap, Dr. Gray does not provide any evidence that cable system operators *actually* rely on viewership information when making decisions about which distant broadcast signals to carry.²³ Nor does he provide any justification on economic grounds for why such information *would* be relied upon by cable operators when selecting distant broadcast signals. Instead, his support for using viewing to infer value for distant broadcast signals is only a set of economically irrelevant references to viewing data being used "when making licensing deals with broadcast stations and cable networks outside the compulsory licensing scheme" (*i.e.*, in ad-supported markets).²⁴ Furthermore, Dr. Gray flatly misquotes his only directly cited evidence, Mr. Paen's 2004-2005 testimony, which discussed ad-supported channels' programming decisions, by substituting "CSO" where Mr. Paen referred to television broadcast stations or basic cable networks, without any support or justification.²⁵
- (25) Dr. Gray's conclusion is simply a non sequitur. Broadcast stations and cable networks both rely on viewership information *because a significant portion of their revenue comes from advertising* and advertising revenues depend on viewership. Broadcast stations are thus naturally interested in how many households will watch any programming they choose to air. Similarly, approximately 43% of US revenues to basic cable networks come from advertising sales, so it is natural that they too wish to understand households' viewing behavior. But cable system operators choosing to carry particular

²² Gray WDT, ¶13.

²³ Nor do any other Program Supplier experts.

²⁴ See, e.g., Gray WDT, ¶14 (citing testimony from 2009 of Alex Paen, a syndicator of first-run programming to broadcast stations and ad-supported cable networks), ¶19 (without supporting citations).

²⁵ Compare Gray WDT, ¶14, with Paen Testimony at p. 12, cited by Dr. Gray. The additional portions of Mr. Paen's testimony cited by Dr. Gray, pages 5-6 and 9-10, also have nothing whatsoever to do with CSO programming choices and do not support Dr. Gray's assertions. See Gray WDT, ¶14 & n.15., and Program Supplier's WDS, Vol. II, Prior Designated Testimony, at Tab A, Docket No. 2007-3 CRB CD 2004-2005, Written Direct Testimony of Alex Paen (hereinafter "Paen Testimony"), pp. 5-12.

Mr. Paen, cited by Dr. Gray, makes this point clear in his testimony regarding his experience selling syndicated programming to broadcast stations. He says, "Suppliers of [syndicated] programming and [broadcast] stations negotiated license fees based on estimated advertising revenue" and "[Syndicated] program revenues are determined by the appeal of a program based on the number of viewers watching. Ultimately, a producer is compensated for program creation and investment out of the sale of advertising time which, in turn, depends on the public's election to watch a program." See Paen Testimony, pp. 5-12.

²⁷ Gregory S. Crawford, "The Economics of Television and Online Video Markets," Chapter 7 in *Handbook of Media Economics*, Vol. 1 (North-Holland, 2015), Table 7.2, pp. 281-282.

distant broadcast signals *cannot* benefit from any advertising on those distant signals; they can only benefit from their carriage to the extent they attract and retain subscribers, not from how much those subscribers actually watch the programming.²⁸

(26) As such, Dr. Gray's analysis is simply incorrect: it analyzes marketplace dynamics that just aren't germane to cable system operators' profitability and thus cannot reflect CSO, and thus distant signal marketplace, value.

II.B.3. Dr. Gray's reliance on relative viewing omits two factors critical to determining relative marketplace value

- (27) It is instructive to focus on cable operator value and ask whether Dr. Gray's method based on relative viewing by consumers could possibly capture that value. In what follows, I show that it cannot, because consumer viewing isn't the same as cable operator value.
- (28) Again, from an economic perspective, the two factors that influence cable system distant broadcast signal carriage decisions are (1) the average consumer value of having a distant signal included in a bundle and (2) the negative correlation in consumers' value for the distant signal relative to their values for the other channels included in the operator's bundle (i.e., whether the programming is likely to attract or retain subscribers).
- (29) Dr. Gray's approach implicitly assumes that consumer viewing *equals* CSO value. To see the flaws in this implicit assumption, it is useful to break it into two parts corresponding to the two factors that affect cable operator carriage decisions. In a nutshell, *consumer viewing is not consumer value* and, even if it were, *consumer value is not cable operator value*.

II.B.3.a. Consumer viewing is not consumer value

(30) I consider first the average consumer value for a distant signal.²⁹ Dr. Gray's implicit assumption that consumer viewership incorporates consumer value has a critical flaw because *his viewership measure* counts minutes equally across programming types.³⁰

Glay WD1, ¶38.

For the same reasons, the arguments made by Ms. Hamilton and Mr. Pasquale citing evidence of cable operators and/or broadcast stations using viewing data to learn about potential advertising revenues are also irrelevant (Written Direct Testimony of Sue Ann R. Hamilton, *In the Matter of Distribution of the 2010, 2011, 2012, and 2013 Cable Royalty Funds.* No. 14-CRB-0010-CD (2010-13) (filed Dec. 22, 2016) (hereinafter "Hamilton Testimony"), p. 14; Written Direct Testimony of Jan Pasquale, *In the Matter of Distribution of the 2010, 2011, 2012, and 2013 Cable Royalty Funds.* No. 14-CRB-0010-CD (2010-13)(filed Dec. 22, 2016) (hereinafter "Pasquale Testimony"), p. 5).

As I described in my direct testimony (Crawford WDT, ¶39) and summarized above, distant broadcast signals that have the same DSE cost the same to cable systems, so that when considering the first factor influencing CSO carriage decisions, the average consumer value for a channel relative to its cost, one can focus just on the average consumer value of the signal.

³⁰ Gray WDT, ¶38.

- (31) Dr. Gray's Table 2 underlying his share estimates makes this implicit assumption clear: he simply counts up his estimates of the minutes of distant viewing of each of the claimant category programming types and calculates the share of distant viewing of each type. These form the basis for his recommended claimant shares of the royalty pool. Thus, in his viewing-as-value framework, one minute viewed of Program Supplier claimants' programming necessarily represents the same value as one minute viewed of Joint Sports claimants' programming.
- (32) The assumption, however, is simply wrong: there is overwhelming evidence that consumers value different types of programming differently.³¹
- (33) First, there is the simple fact that cable networks offering different types of programming are able to negotiate very different per-subscriber fees from cable systems. These per-subscriber fees (called affiliate fees) are informative as they represent what cable operators are willing to pay for different content in actual transactions in a separate programming marketplace that is partially subscription-based, a willingness that reflects their belief that they can then charge subscribers the prices necessary to cover these costs
- (34) In my Written Direct Testimony, I noted that cable systems in 2016 paid the Walt Disney Company an estimated average of \$7.21 per subscriber per month for the right to carry the sports channel ESPN.³² By contrast, the cable network Animal Planet received an estimated average of only \$0.12 per subscriber per month from cable operators in 2016.³³ While some of this difference no doubt reflects differences in bargaining power held or advertising revenue earned by the two cable networks, it also reflects that the different content carried on these channels is simply valued differently by consumers.
- (35) The differences in what cable systems are willing to pay for content is particularly pronounced for sports programming relative to other types of programming. Figure 1 below, adapted from some of my recent academic work in progress, reports the average affiliate fee paid for different cable networks in 2010-2013 against their average viewership, or "ratings," in the same years.³⁴ In the

In addition to the evidence discussed in the paragraphs that follow, Dr. Alan Rubin, who testified on behalf of Program Suppliers in prior cable royalty distribution proceedings and whose testimony from the 1989 Cable Royalty Distribution Proceeding Program Suppliers incorporate by reference in this proceeding, provided testimony about his academic publications in the subfield of media research known as the "uses and gratifications theory," which seeks to identify the different needs motivating people to view television and the different rewards they experience from such viewing. During cross-examination, Dr. Rubin admitted that his research showed that people who watch television for the purpose of "passing the time" both watch more television and tend to get *less* satisfaction from that viewing. *See* Program Supplier's WDS, Vol. II, at Tab D, Hearing Transcript of Dr. Alan Rubin *In the Matter of 1989 Cable Copyright Royalty Distribution Proceeding*, Docket No. CRT 91-2-89CD, pp. 5432, 5436-5438.

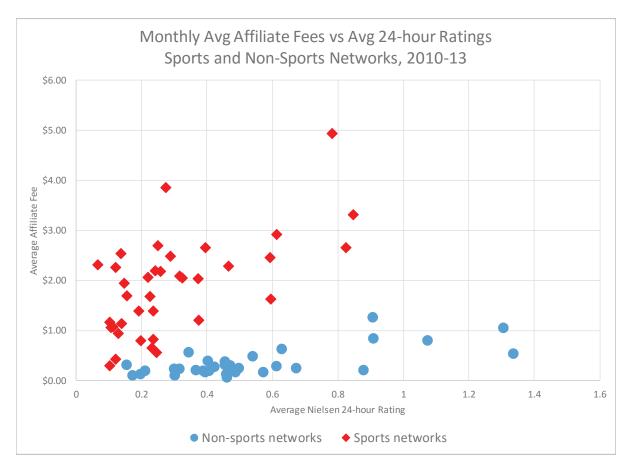
Frank Bi, "ESPN Leads All Cable Networks in Affiliate Fees," *Forbes.com*. Jan. 8, 2015, *available at* http://www.forbes.com/sites/frankbi/2015/01/08/espn-leads-all-cable-networks-in-affiliate-fees/#4b87b5a4e60c.

³³ SNL Kagan, TV Network Summary. Accessed August 29, 2017, 18:57. https://www.snl.com/web/client?auth=inherit#industry/tv NetworksSummary

³⁴ See Figure 3 in Gregory S. Crawford, Robin S. Lee, Michael D. Whinston, and Ali Yurukuglu, "The Welfare Effects of Vertical Integration in Multichannel Television Markets" (NBER Working Paper No. 21832, 2015) (CTV0001747-

figure, networks with sports content are indicated by red diamonds; those with non-sports content are indicated by blue dots.³⁵





(36) The difference in the amount of money paid by cable systems to networks providing sports versus non-sports content *for the same level of viewership* is remarkable. Not only are fees for sports content much higher than fees for non-sports content for the same level of viewership, they are typically a multiplicative factor higher. For example, between 2010 and 2013, the Hallmark Channel received an

CTV0001809). The Nielsen "rating" is the percentage of all US television households who watch a given program on a given network at a given time.

³⁵ Crawford et. al. (2015) analyze the period 2000-2010 and include in their analysis all offered Regional Sports Networks (RSNs), the 36 most highly-watched national cable networks, and two additional national cable networks with sports-related content (ESPN Classic and the Golf Channel). Networks with sports content were defined as all RSNs as well as national cable networks ESPN, EPSN2, ESPN Classic, and the Golf Channel. The remaining networks were defined as having non-sports content. I include the same channels here, but use updated ratings and affiliate fee data from 2010-2013. SNL Kagan, TV Network Summary. Accessed August 29, 2017, 22:30. https://www.snl.com/web/client?auth=inherit#industry/tv NetworksSummary

average Nielsen rating of 0.46 and earned an average affiliate fee from CSOs of 6.4 cents per subscriber per month, whereas the Regional Sports Network Comcast SportsNet Chicago received an average Nielsen rating of 0.40 but earned an average affiliate fee from CSOs of \$2.65 per subscriber per month, over forty times as much.³⁶

- (37) It was for this reason that my co-authors and I specified a model of consumer demand in our academic research to specifically allow for sports content to have a different value per minute of programming than non-sports content.³⁷ When we estimated this model on marketplace data, we found that "consumers derive higher utility from sports channels than non-sports channels if they choose to spend the same amount of time watching each."³⁸ Contrary to Dr. Gray's unsupported assertion that "[a] measure of the utility all subscribers get, in total, from a specific program is the total level of subscriber viewing of the program,"³⁹ our research using marketplace data shows instead that in order to accurately measuring cable operator value it is critical to incorporate information about the price cable systems are willing to pay to get access to that programming.
- (38) This same marketplace difference between prices paid for sports versus non-sports content has also been noted by witnesses in this proceeding representing the Joint Sports Claimants. Daniel M. Hartman, former vice-president of programming acquisitions at DirecTV, and Allan Singer, former senior vice-president of programming investments at Comcast, report that the average costs per subscriber for sports programming "far outweigh" costs per subscriber for non-sports programming, with fees for Regional Sports Networks and the leading sports channel ESPN "4 to 5 times more expensive than the next most expensive non-sports services, and 10 times more expensive than some of the most popular, name brand, general entertainment services."
- (39) Dr. Mark Israel, Senior Managing Director at Compass Lexecon, in his written direct testimony presented on behalf of the Joint Sports Claimants, extends this analysis to look at expenditures on sports programming *per viewing hour* and finds similar patterns. He analyzes the expenditure on sports and non-sports programming by the top-25 cable networks and finds that while sports programming accounted for less than 3% of total household viewing hours, it accounted for more than 22% of their programming budgets. On a per-household-viewing-hour basis, he concludes that

According to Wikipedia, the Hallmark Channel "features a mix of television movies and miniseries, original and acquired television series, and lifestyle programs," whereas Comcast SportsNet Chicago "broadcasts regional coverage of professional sports teams in the Chicago area." See Wikipedia, "Hallmark Channel," accessed September 5, 2017, https://en.wikipedia.org/wiki/Hallmark_Channel and Wikipedia, "Comcast SportsNet Chicago," accessed September 5, 2017, https://en.wikipedia.org/wiki/Comcast_SportsNet_Chicago.

³⁷ See equation (1) and the text surrounding it on pages 12-13 as well as page 25 of Crawford et. al. (2015).

³⁸ Crawford et. al. (2015) at p. 34.

³⁹ Gray WDT, ¶13.

Written Direct Testimony of Daniel M. Hartman, In re Distribution of Cable Royalty Funds, No. 14-CRB-0010-CD (filed Dec. 22, 2016), ¶29. Written Direct Testimony of Allan Singer, In re Distribution of Cable Royalty Funds, No. 14-CRB-0010-CD (filed Dec. 22, 2016), ¶26.

- sports programming "is worth roughly 10 (9.60) times more than all other programming offered on the top 25 cable networks."
- (40) Second, while these patterns of high expenditure per viewing hour are most common for sports content, they also arise for other kinds of niche but non-sports content. Among the cable networks for which affiliate fee and ratings data were available from SNL Kagan in the 2010-2013 period, the five non-sports networks with the largest ratio of the average affiliate fee received from cable operators to average 24-hour rating were for Al Jazeera America, FM (then known as NuvoTV), MTV Classic, Fox Business Network, and CNBC. All could reasonably be considered "niche" content.⁴²
- (41) Finally, these obvious differences in the value of different types of content are borne out by the separate regression analyses included in my and Dr. Israel's direct testimonies. On average across 2010-13, after dropping all duplicate network programming on distant broadcast signals, I found that Sports content had the highest value per minute at 96.3 cents/minute. The values per minute of programming for content by the other claimants was (from high to low): CTV at 15.9 cents/minute, Canadian at 11.7 cents/minute, Program Suppliers at 6.9 cents/minute, Public Television at 5.4 cents/minute, and Devotional at 3.2 cents/minute.
- (42) A simple way to articulate a more plausible relationship between consumer viewing and consumer value is that consumer value for a particular programming type is the product of consumer viewing of that programming type times the *average consumer value per viewing minute* of that programming type. ⁴³ Dr. Gray, contrary to the marketplace evidence presented above, simply and incorrectly assumes that consumers value viewing minutes of different programming types the same. Doing so means that his methods will tend to undervalue content that has relatively high consumer value per

⁴¹ Israel WDT, ¶47.

According to Wikipedia, in 2010-13, Al Jazeera America was a news channel owned by Middle Eastern interests, FM (then known as NuvoTV) offered English-language programming "catered to the Latino community," MTV Classic was a music video channel emphasizing classic rock videos, and Fox Business Network and CNBC were business news networks. See Wikipedia, Al Jazeera America, Accessed Sep. 12, 2017. https://en.wikipedia.org/wiki/Al Jazeera America, Wikipedia, FM (TV channel), Accessed Sep. 14, 2017. https://en.wikipedia.org/wiki/MTV Channel), Wikipedia, NuvoTV, Accessed Sep. 14, 2017, https://en.wikipedia.org/wiki/MTV Classic (U.S. TV network), Wikipedia, Fox Business Network, Accessed Sep. 14, 2017, https://en.wikipedia.org/wiki/MTV Classic (U.S. TV network), and Wikipedia, CNBC, Accessed Sep. 14, 2017, https://en.wikipedia.org/wiki/CNBC.

These marketplace examples support the general proposition that CSO willingness to pay reflects the relatively higher value of programming that is differentiated from other content within a cable channel bundle. However, the nature of programming content on cable networks, as contrasted with the nature of programming on distant signals, precludes the use of cable network data as a direct benchmark for determining the relative value of distant signal programming types in this proceeding.

This simple representation assumes away that a programming type has "option value," i.e. that it can be valued by consumers even when it isn't being watched. I do so not to diminish the relevance of such option value (which can be important, for example in the case of information about extreme weather events, and is another reason not to rely on Dr. Gray's approach), but to focus attention on Dr. Gray's implicit assumption that the value of a viewed minute of each programming types is necessarily equal to that of all others.

- minute (e.g. sports, news, and Canadian content) and will therefore under-estimate the true relative marketplace value of that programming.
- (43) Dr. Gray's approach to measuring the relative marketplace value of programming on distant broadcast signals is akin to going to a fancy restaurant, drinking the same amount of water and wine, and expecting to pay the same price for each. To consumers, volume isn't value any more than viewing is value.

II.B.3.b. Consumer value is not cable operator value

- (44) The second major economic factor reflected in CSOs' selections of which distant broadcast signals to carry is the negative correlation in consumer values for some content on distant signals relative to content already in their cable bundles. Again, *even if* Dr. Gray had correctly measured consumer value by his consumer viewing measure (which he has not), consumer value is not the same as cable operator value. Failing to account for this difference also causes him to mis-estimate the relative marketplace value of alternative types of distant signal programming.
- While research based on marketplace data demonstrates that cable operators have incentives to add niche, or special-interest, programming due to the profit-maximizing opportunities presented by bundling of channels for sale to households, 44 that research merely confirms views that are widely shared in the industry. As an article in the Washington Post reported, "the cable TV business... in the 1990s created new opportunities for minority programs, local news, and niche educational networks with small but dedicated numbers of fans." Similarly Leo Hindery, who was head of Tele-Communications, Inc. (TCI) when it was the largest national cable operator, recently stated, "The bundle is the most democratic thing we ever created... [W]e decided we would have content for all people people of color, people of different orientations, different faith bases, different educational capabilities we were going to give them all of that. You ate what we served, but what we served was very diverse." 46
- (46) Of course, the recent rise of online video alternatives to cable and the coming of age of young adults raised on Internet content has concerned cable operators. Nielsen reports that while the average U.S. television household in 2013 received 189.1 television channels, it only watched an average of 17.5 of them, a number slightly *less* than the number watched in 2009, despite a more than one-third increase in the intervening years in the number of offered channels.⁴⁷ In an effort to offer service to

⁴⁴ See, *infra*, at ¶(17).

Kang, Cecilia, In cable, it's survival of the fittest as channels drop from the bundle. The Washington Post, Apr. 7, 2015. https://www.washingtonpost.com/business/economy/in-cable-its-survival-of-the-fittest-as-channels-drop-from-the-bundle/2015/04/07/ebe91abc-ce5d-11e4-8c54-ffb5ba6f2f69 story.html?utm term=.21e0b20f244e

⁴⁶ Interview, Leo Hindery by David Garrity. "Cable Exec Leo Hindery on the Future of Bundles". Investopedia.com. Oct. 28, 2016. http://www.investopedia.com/video/play/cable-exec-leo-hindery-future-bundles/

⁴⁷ In 2009, the average household received 136.4 channels and watched an average of 17.7. (189.1-136.4)/136.4 = 38.6%. *See* "Advertising & Audiences – State of the Media". Nielsen Holdings. Page 14. May, 2014.

- households at lower price points, cable operators have begun to offer "mini-bundles" or "skinny bundles," but *they continue to offer bundles*. ⁴⁸ This is due to the strong positive effect of bundling on cable operator profits.
- (47) Because of these profit effects of bundling, when facing a choice of two distant broadcast signals with the same cost and the same average consumer value, cable operators will have an incentive to choose those distant broadcast signals that offer more niche, or special-interest, programming.
- (48) This cable-operator value for niche programming *on top of* the values that consumers may place on such programming causes cable operator value and consumer value to diverge. A simple way to articulate a possible relationship between them is that cable operator value for a particular programming type is the product of the average consumer value of that programming type times the "bundling premium" of that programming type, i.e. the additional value it provides to the cable operator due to the correlation in consumer tastes for that programming with other components of operators' channel bundles (if any). Even if Dr. Gray could properly infer consumer value from consumer viewing (which he cannot), simply and incorrectly assuming that *cable operators* value different programming types the same way means that he underestimates the value of niche programming and therefore underestimates the true relative marketplace value of programming from these claimant groups. This, in turn, causes him to misestimate the relative marketplace value of programming from all claimant groups.

II.C. The evidence provided by Dr. Gray and other Program Supplier experts in support of viewing-as-value is wrong

(49) Dr. Gray tries to support his faulty syllogism by citing the prior testimony of Mr. Paen, but does not cite it accurately, as explained above. In addition, Program Suppliers present the testimony of two other witnesses, Ms. Sue Ann Hamilton and Mr. Jan Pasquale. None of the arguments presented by these witnesses can support Dr. Gray's viewing-as-value approach.

https://www.nielsen.com/content/dam/nielsenglobal/jp/docs/report/2014/Nielsen_Advertising_and_%20Audiences%20_Report-FINAL.pdf

⁴⁸ See Koblin, John, "Unwrapping the Cable TV Bundle", The New York Times. Oct. 3, 2015. https://www.nytimes.com/2015/10/05/business/media/unwrapping-the-cable-tv-bundle.html?mcubz=0. Even online video services seeking to appeal to "cord-cutters" are themselves offering bundles, to the ire of industry observers. See Mossberg, Walt, Mossberg: Streaming TV is beginning to look a lot like cable. Recode. Jan 11, 2017, 09:00 EST. https://www.recode.net/2017/1/11/14234164/mossberg-streaming-tv-cable

II.C.1. While consumer viewing may be an *input* into consumer value, it is not equal to consumer value (much less CSO value)

- (50) Dr. Gray, Ms. Hamilton, and Mr. Pasquale all argue that consumers decide to subscribe to a cable bundle (Gray/Hamilton) or HBO, a premium channel (Pasquale), in order to watch programming and that if they don't watch, they are unlikely to keep their subscription. While this may be correct, at least for some consumers, the implicit inference that these witnesses seek to convey that Dr. Gray's measure of consumer viewing is therefore a measure of consumer value (much less CSO value) is *not* correct.
- (51) At the end of Section II.B.3.a, I described how, ignoring a program type's "option value," a consumer's value for a programming type might be described as the product of their viewing of that programming type times their value-per-minute of that programming type. When this simple relationship holds, it would be fair to conclude that if there is no viewing at all of a particular type of program in a subscribing household, then there is no non-option value to that programming type for the household. But it would be wrong to extend that observation to assert that relative consumer value for a programming type is simply equal to the relative amount of its viewing. And even if consumer viewing did equal consumer value, for the reasons discussed in Section II.B.3.b above, it would not equal cable operators' value.
- (52) Mr. Pasquale says, based on HBO's experience, "I would expect CSOs to similarly consider ratings of the content on a distant broadcast station as a metric for determining the station's potential to attract and retain subscribers." But HBO's "viewing studies," which he does not describe, only revealed the "correlation between subscribers *not watching* HBO/MAX and the decision to drop their subscription" (emphasis added). As described immediately above, while zero viewing may mean zero value, that does *not* mean that more relative viewing equals greater relative value.

⁴⁹ Gray WDT, ¶13; Hamilton WDT, pp. 13-14; Pasquale WDT, p. 4.

⁵⁰ Option value, as noted above, may represent real value to some subscribers.

⁵¹ Pasquale WDT, p. 6.

Pasquale WDT, p. 3. The different role played by ratings at HBO relative to typical broadcasters is understandable, as reflected in the popular press. In an article titled, "Traditional Ratings Numbers Don't Matter as Much to HBO," an HBO analyst concludes that "HBO finds itself nearly exempt from the pressure of driving ratings ever higher" and that "[w]hile [ratings] are a great way to determine whether interest is up for the same show in a previous year, it doesn't speak to much else as these numbers are obviously incompatible when it comes to the Home Box Office," in part because "[t]he primary function of ratings ... is to prove to advertisers how many eyeballs will be on their latest advertisement, ... [b]ut for HBO's programs advertisers don't exist and therefore do not need to be massaged every 30 days with new ratings numbers." See Klein, Jacob. "Traditional Ratings Numbers Don't Matter as Much to HBO". HBO News. Apr. 3, 2013. Accessed Aug. 2, 2017. http://hbowatch.com/traditional-ratings-numbers-dont-matter-as-much-to-hbo/. Another author noted, "Ideally, every [HBO] show will receive a) critical praise, b) a huge audience, and c) a shelf full of statuettes. But in a pinch, just one of those things will suffice... Popular 'buzz,' a uselessly fuzzy concept for channels that make money from ad sales, is important to HBO and Showtime because it generates subscriptions," concluding "premium cable [networks like HBO do] pay attention to ratings - just different ratings, and with different standards of success, than at the broadcast networks." See Thomas, June. "How Much Gold is Game of Thrones Worth?" Slate Magazine. Mar. 29, 2012.

- Mr. Pasquale similarly does not describe the "ratings" data he speculates CSOs would use, nor does he report a single instance in which CSOs do rely on ratings data for distant signal carriage decisions. HBO is a nationally distributed cable network for which Nielsen collects national ratings data. By contrast, viewership of programs on broadcast television stations in their own local markets would not reveal how the same programs might be viewed in the CSO's different market, against a different lineup of competing viewing options. And, as described in the next section, ratings for distant signals are not generally reported by Nielsen in their distant markets.
- (54) No Program Suppliers witness has provided any evidence that CSOs use viewership information to determine what distant broadcast signals to carry. Nor have they provided sound economic arguments for why CSOs would use viewership information to determine distant signal value. Without such evidence, measures of relative value based on relative viewing should simply be disregarded.

II.C.2. In in a radically transformed "hypothetical" market in which ad sales were permitted on distant signals, CSOs carrying distant broadcast signals would not likely earn any meaningful advertising revenue

- (55) Ms. Hamilton and Mr. Pasquale both advance the unfounded assertion that *even if* CSOs cannot now earn advertising revenue on distant signals, they might somehow be able to do so in a different, hypothetical market.⁵³
- (56) This assertion, however speculative, is also incorrect, for three reasons based on the institutional characteristics of advertising sales. First, the viewing of distant broadcast signals is miniscule as a share of total television viewing.⁵⁴ Even if CSOs were permitted to replace the advertisements aired in the signal's original market with their own, there would be no appreciable value to such

Replicating this analysis on the Nielsen data provided by Dr. Gray in this proceeding yields a similar conclusion. According to the data analyzed by Dr. Gray, between 2010 and 2013, there is an annual average of 430.8 hours of total daily viewing of distant signal programming on the sample of stations he selected across an annual average of 20,875 households in the Nielsen National People Meter sample, for an average daily viewing of distant broadcast programming across these years of 0.021 hours/household. In a widely publicized annual report, Nielsen found that the average daily time spent watching either traditional or time-shifted television among all US persons aged 2 or more in 2013 is 4.96 hours/day (See Nielsen, *A Look Across Media, The Cross-Platform Report.* December 2013. http://www.agbnielsen.net/Uploads/Ireland/The-Cross-Platform-Report-A-Look-Across-Media-Q3-2013.pdf, Table 1, column "P2+") A conservative estimate of the share of total television viewing allocated by households to distant signal programming in the 2010-13 period is therefore 0.021/4.96 = 0.42%.

http://www.slate.com/articles/arts/culturebox/2012/03/game_of_thrones_how_hbo_and_showtime_make_money_despite_low_ratings_.html.

⁵³ Hamilton WDT, p. 14-15; Pasquale WDT, p. 5.

In the 2004-05 proceeding, Dr. Michael Topper, a witness for the Commercial Television Claimants, estimated that viewing of distant broadcast signal programming was 0.66% of the total 2004-05 viewing by households sampled in the MPAA Special Study provided by Program Suppliers witness Dr. Paul Lindstrom. He reached this conclusion by calculating the average daily viewing of distant signal programming from that study and dividing it by the average household viewing of all television programming reported by Nielsen for the 2004-05 television season.

advertisements because there would be insufficient audiences for them. Second, I understand that Nielsen generally does not report ratings for distant broadcast stations, because they typically fall below its minimum reporting standards in most local market ratings reports. Without such ratings, CSOs could not readily sell advertising in particular programs on distant broadcast stations, even if there were audiences to sell. Finally, I further understand that, *even if* distant broadcast stations had sufficient audiences for CSOs to sell and Nielsen reported those audiences, advertisers primarily focus their advertising purchases on the (much larger) audiences offered by local broadcasters, and would be less interested in the scattered (and very small) audiences offered by distant broadcast signals. The scattered is the scattered of the scattered by distant broadcast signals.

(57) For these reasons, I conclude that even if one were to consider a counterfactual world in which CSOs could sell advertising in distant signal programs, there would be no appreciable advertising revenue available for CSOs that sought to do so. Accordingly, as in the existing market, the principal benefit to cable system operators from carrying distant broadcast signals would be their ability to attract and retain subscribers. In such a world, using relative viewing data to infer relative marketplace value is simply incorrect.

In Dr. Bennett's analysis of the calculation of Dr. Gray's viewership shares, he highlights how Dr. Gray imputes viewership data in instances where there was no recorded viewing of distant signal viewing as part of the Nielsen Household Meter Data underlying his analysis. Dr. Bennett's Figure 16 shows that, for the sample of distant broadcast stations selected by Dr. Gray, between 93.1% and 95.3% of that programming had no distant viewing record from Nielsen.

The same patterns hold for the broader population of distant broadcast signals. As part of its analysis of the issues raised in the STELA Reauthorization Act of 2014, the Federal Communications Commission reviewed Nielsen data to examine viewing of distant broadcast signals (*See* FCC Report DA 16-613, *In the Matter of Designated Marked Areas: Report to Congress Pursuant to Section 109 of the STELA Reauthorization Act of 2014*, MB Docket No. 15-43, pp. 25-27 (Federal Communications Commission, Washington, D.C. 20554, Released Jun. 3, 2016). In particular, the FCC determined the identity of all broadcast stations whose viewing in the month of November 2015 in a distant DMA exceeded the threshold applied by Nielsen in order to be reported in the distant DMA. This threshold requires that the viewing of the distant signal exceed a 9.5 "cume", short for "cumulative rating," i.e. the distant station must have had viewing by at least 9.5 percent of unique households for a minimum of one quarter-hour during a given Nielsen week (Sunday through Saturday, 7:00 a.m. through 1:00 a.m.). Page 26 of the FCC report identified only 89 distant signals being viewed in a distant market (encompassing 79 distinct distant signals) from the more than one thousand unique distant signals carried in distant markets by CSOs in a typical year.

⁵⁶ CTV Expert Jerald N. Fritz spoke to this issue during the testimony he provided in the 2004-05 proceeding. See Hearing Transcript of Jerald N Fritz, *In the Matter of: Distribution of the 2004 and 2005 Cable Royalty Funds*, Docket No: 2007-3 CRB CD 2004-2005, Volume IV, pp. 979-980, 990-993 (Oct. 13, 2009). That fewer than 10% of carried distant broadcast signals surpassed the reporting minimum threshold for Nielsen further demonstrates the folly of Dr. Gray's approach of using such data to determine relative marketplace value in this proceeding.

⁵⁷ CTV rebuttal expert. Ceril Shagrin concludes, "Typically, advertisers who buy advertising time in the local market would prefer local stations, which offer complete coverage of the market and higher ratings, and advertisers interested in national ad exposure would buy time on national networks or nationally syndicated programs." *See* Rebuttal Testimony of Ceril Shagrin, *In the Matter of Distribution of Cable Royalty Funds, No. 14-CRB-0010-CD* (2010-13) (filed Sep. 15, 2017), ¶15. This effect was potentially magnified with the significant increase in subscriber group reporting in 2010. Beginning then, many more distant signals were carried in a subset of a system's subscriber groups, and not across all of the system's subscriber groups. This incomplete market coverage would further lessen a distant signal's attractiveness to advertisers.

II.D. Dr. Gray uses the wrong data

- (58) My discussion of Dr. Gray and the other Program Supplier experts' testimony to this point has focused on the flaws in their viewing-as-value approach. As mentioned briefly in Section II.B.2 above, however, Dr. Gray also mistakenly claims that "sufficient data are unavailable to properly model CSOs' buying decisions." He doubles down on this claim later in his testimony when he says, "[G]iven the available data, [relative viewing] is the most direct measure of relative value." 59
- (59) These conclusions are flatly wrong. As demonstrated in my own direct testimony, Dr. Israel's direct testimony on behalf of the Joint Sports Claimants, the direct testimony of other experts in previous proceedings, and the Bortz survey results presented in this and previous proceedings, there *is* directly relevant data readily available to measure the relative value to cable service operators of the alternative programming types carried on distant broadcast signals.
- Indeed there are two useful sources of such data. The first is the survey data produced by the Bortz Media & Sports Group as described in the written direct testimony of James M. Trautman. The second is the royalty payment and distant signal carriage data filed by cable operators as required by the Copyright Act and available in digital form from the Cable Data Corporation (CDC), paired with information about the programs carried on each distant signal available from a variety of program lineup providers. Indeed, the primary purpose of my direct testimony is to describe exactly how such data can be used in a regression analysis to reveal the relative marketplace value of the programming carried on distant broadcast signals.
- (61) It is worth noting that if Dr. Gray's method of relying on relative viewership did provide information about the relative value to cable operators of alternative programming types, then my regression analysis and the cable operator surveys would be expected to reveal these same relative values. In particular, there is nothing in my regression analysis that requires the estimates to come out as they do, either for the estimated values of programming on a per-minute basis or for the overall shares of the royalty pool that should go to each claimant implied by those estimates. If Dr. Gray's premise were correct and relative viewing did reveal relative value to CSOs, then our estimated shares would agree. Because they do not, 62 and because Dr. Gray's are based on an economic framework that cannot correctly reveal relative marketplace value, his must be disregarded.

⁵⁸ Gray WDT, ¶12.

⁵⁹ Gray WDT, ¶22.

⁶⁰ Trautman WDT

⁶¹ In my direct written testimony, I relied on program lineup information from FYI Television (Crawford WDT, Section V.C, pp. 23-27). In Dr. Israel's as well as Dr. Gray's direct testimony, both relied on program lineup information from Tribune Media Services / Gracenote (Israel WDT, Appendix B-3; Gray WDT, ¶23).

⁶² Using 2013 as a representative example year, compare Dr. Gray's proposed relative shares for Program Suppliers and Sports, 44.69% and 4.80% respectively, with my regression study shares of 19.74% and 38.56% and the Bortz Survey

II.E. Dr. Gray's Viewing Study is Not Usable

- (62) The goal of this proceeding is to understand the relative marketplace value placed by cable operators on the different types of programming carried on distant broadcast signals. The appropriate economic framework for doing so seeks to quantify the relative value of programming to cable operators in their efforts to attract and retain subscribers.
- (63) Dr. Gray's economic framework based on consumer viewership decisions is simply wrong and is guaranteed to mis-measure relative marketplace value by ignoring that (a) consumers value different types of programming differently and (b) because of the incentives caused by operators' bundling of cable networks, cable operators and consumers value different types of programming differently. For these reasons, Dr. Gray's estimates of relative marketplace value should be disregarded when determining the appropriate relative marketplace value for the content carried on distant broadcast signals.⁶³

shares of 27.3% and 37.7% (Gray WDT, Table 2, p. 20; Crawford WDT, Figure 20, p. 45; Trautman WDT, Table IV-1, p. 42).

⁶³ I understand that other rebuttal witnesses appearing on behalf of the Commercial Television Claimants, Ms. Shagrin and Dr. Bennett, will testify that Dr. Gray's study should be disregarded for the independent reasons that the study's design is such that it cannot validly or reliably measure distant signal viewing, and that errors were made even in the execution of that erroneous design.

III. Rebuttal of Dr. Erdem's testimony

(64) In this section, I evaluate arguments presented by Dr. Erkan Erdem, an expert presented on behalf of the Devotional Claimants, regarding the usefulness of regression methods used by multiple experts for other claimant groups to evaluate the relative marketplace value of the programming carried on distant broadcast signals. This corresponds to the material in Section VIII in his written direct testimony.⁶⁴

III.A. Summary of Dr. Erdem's testimony

- (65) Dr. Erdem discusses in general terms the regression analyses presented by Dr. Mark Israel for the Joint Sports Claimants, Dr. Lisa George for the Canadian claimants, and by me for the Commercial Television Claimants. These are studies "in which the dependent variable is the royalty fees paid by a system and independent [i.e. explanatory] variables include minutes of programming for each claimant category and other control variables, such as factors that may be correlated with the royalty fees," and which "attempt to estimate the marginal effect of each minute of programming for claimant categories included in the model on royalty fees paid by the CSO." Dr. Erdem claims that the starting point for this type of regression analysis "is the approach that was presented by Dr. Waldfogel in the 2004-2005 proceedings," causing him to refer to this general approach as "Waldfogel-type regressions" in his testimony. 66
- (66) Dr. Erdem's discussion of "Waldfogel-type regressions" consists of two parts. First, he presents "two fundamental criticisms" that lead him to conclude that "Waldfogel-type regressions do not measure relative market value." I provide more detail about these criticisms and show them to be incorrect in the next subsection.
- (67) Second, he presents what he calls "refinements" of Dr. Israel's "Waldfogel-type" regression "to propose a new set of results to the Judges." His claimed purpose is to "(1) demonstrate that Waldfogel-type regression results and implied royalty shares are sensitive to the choice of variables, model specification, and the presence of 'outliers' or 'influential observations,' and (2) propose

⁶⁴ See Written Direct Testimony of Dr. Erkan Erdem, *In the Matter of Distribution of the 2010-2013 Cable Royalty Funds*, No. 14-CRB-0010-CD (2010-13) (filed Mar. 9, 2017) (hereinafter "Erdem WDT"), pp. 13-18

⁶⁵ Erdem WDT, p. 13. He also mentions the regression analysis by Dr. Jeffrey Gray, an expert presenting testimony on behalf of the Program Supplier claimants, but does not discuss it in detail, noting that it has a different dependent variable and different independent variables than those used by the other three experts. I understand that in separate testimony, Dr. Chris Bennett is describing the flaws in Dr. Gray's regression analysis.

⁶⁶ Erdem WDT, p. 13.

⁶⁷ Erdem WDT, p. 14.

⁶⁸ Erdem WDT, p. 14.

- models that better characterize the underlying data generating process."⁶⁹ He ultimately concludes that "[o]verall, ... Waldfogel-type regressions say little about relative market value."⁷⁰
- (68) Unfortunately, Dr. Erdem's econometric analyses fail to consider the underlying economics of the behavior he is seeking to analyze, rendering them and his conclusions faulty and unreliable. In addition, the variables he adds in his "refinements" to Dr. Israel's regressions change the interpretation of the key parameters in these regressions (those on the number of programming minutes of each of the claimant categories) in fundamental ways that would be expected to cause exactly the types of effects he demonstrates in his results. As such, none of his criticisms of Dr. Israel's specific regressions results, nor of "Waldfogel-type regressions," are valid. Regression methods can be useful for inferring the relative marketplace value of alternative programming categories if they are carefully crafted to reflect the underlying economic environment and executed with care.

III.B. Dr. Erdem's high-level criticisms of "Waldfogel-type regressions" are simply incorrect

III.B.1. Dr. Erdem's assertion that regression approaches cannot inform the Judges because royalty rates are regulated is wrong

- (69) Dr. Erdem asserts that Waldfogel-type regressions "cannot inform the Judges on what the CSOs would have paid for each claimant category in a free market" because the "royalty fees…are the results of the formula mandated by the statute" and "are not amounts CSOs and content producers [and] media companies negotiate for a specific program or set of programs." ⁷¹
- (70) This is simply wrong. First, as outlined above, the critical element in determining the relative marketplace value of programming on distant broadcast signals is the relative value placed on such programming by cable system operators. What Dr. Erdem calls "Waldfogel-type" regressions *reveal* relative CSO value. They do so because they account for the decisions of the CSOs themselves about whether or not to carry distant broadcast signals and pay the required royalty. 72
- (71) "Waldfogel-type regressions" estimate CSO demand or, equivalently, CSO willingness-to-pay, for the programming on distant broadcast signals using econometric methods. Variation in the number of a CSO's subscribers, the price each pays for the bundle including distant broadcast signals, the number

⁶⁹ Erdem WDT, pp. 14-15.

⁷⁰ Erdem WDT, p. 18.

⁷¹ Erdem WDT, p. 14.

⁷² Indeed, CSO value would continue to measure marketplace value even in a hypothetical market where CSOs needed to negotiate with distant broadcast signals over payments for carriage.

of a CSO's carried broadcast signals (and their DSEs), and the programming types carried on such signals provides the necessary variation in both royalties and programming minutes to trace out the value CSOs place on different types of programming. Section IV in my direct testimony provided more detail about how this process works, and Figure 3 and the surrounding text in that testimony provided an example showing how a cable operator required to pay a fixed price for any of three distant signals can be expected to choose the one that provides the highest-value mix of programming.⁷³

III.B.2. Dr. Erdem incorrectly asserts that Waldfogel-type regressions are "volume-focused"

(72) Dr. Erdem's second "fundamental criticism," that Waldfogel-type regressions are a "volume-focused" approach, is also simply incorrect. The full text in his testimony says:⁷⁴

...it would be a significant simplification and mistake to assume that the "value" of a program category is measured in minutes of programming. This volume-focused approach is not a reliable method. For example, CSOs may value a short program (e.g., 30-minutes) more than they value a longer program (e.g., 90-minutes). Or they may value a weekly program more than a daily program. Hence, a determination of relative market value cannot be based on total hours or minutes of programming, even if a robust relationship can be established between minutes of programming and royalties.

- (73) There appear to be two claims in this paragraph, both incorrect. The first is that "Waldfogel-type regressions" use the volume of minutes in order to determine the relative value of each type of programming.⁷⁵ The second is that the fact that different programs within a program type may have different value means one cannot calculate a total value of a programming type.
- (74) First, Waldfogel-type regressions do *not* measure the relative value of a programming type using *only* the number of minutes of that programming type. Indeed, if they did do this, Dr. Erdem would be correct to criticize them, as this same mistake underlies one of the flaws I highlighted above about Dr. Gray's use of viewing data to measure relative marketplace value.
- (75) But so-called "Waldfogel-type regressions" don't only rely on the number of minutes of each programming type. Critically, they also measure the *average value per minute* to CSOs of each programming type. Multiplying the average value per minute by the number of minutes of

⁷³ Crawford WDT, ¶¶47-54.

⁷⁴ Erdem WDT, p. 14.

⁷⁵ Erdem WDT, p. 14.

- programming gives the total value of each program type. In essence, Waldfogel-style regressions are *value*-focused, not volume-focused.
- (76) Of course, the average values per minute of each claimant's programming are unknown in practice and therefore need to be estimated. It is for this very purpose that one turns to a Waldfogel-type regression: they use variation in the royalties paid by CSOs for distant broadcast signals consisting of different numbers of programming minutes to infer the average value per minute of each programming type. These estimated average values per minute are the estimated coefficients in such a regression.
- (77) Second, Dr. Erdem's example suggesting that one needs to identify the value of individual programs in order to get an estimate of total value of a programming type is also incorrect. A regression does not need to identify the values of the minutes for each program within a category in order to correctly estimate the total value of the category. Rather, the regression only needs to estimate the *average* value per minute of a programming category. Fortunately, this is exactly what regressions do.
- (78) As a simple example, suppose that Dr. Erdem's 30-minute program in one category is valued at 20 cents/minute (for an overall value of this program of \$6.00) and a 90-minute program in the same category is valued at 5 cents/minute (for an overall value of this program of \$4.50). The total value of the 120 minutes of both programs in this case is \$10.50. In this example, the regression would associate 120 minutes of programming in the category with a total value of \$10.50 and estimate an average value per minute of the programming of \$10.50/120 = 8.25 cents/minute. Despite the fact that neither program was valued at exactly 8.25 cents/minute, the regression averages them appropriately and correctly calculates the value of the total 120 minutes at \$10.50.

III.C. Dr. Erdem's alternative regression models fail to consider the underlying economics of the behavior he is seeking to analyze and materially change the interpretation of the key parameters in the model

III.C.1. Overview

(79) In the last half of his direct report, Dr. Erdem presents what he calls "refinements" of Dr. Israel's Waldfogel-type regression "to propose a new set of results to the Judges." He considers three such refinements: (a) he includes an (undefined) new variable, the "number of distant broadcast signals," as an additional regressor in Dr. Israel's analysis; (b) he allows some of Dr. Israel's explanatory or control variables to have nonlinear rather than linear effects; and (c) he explores the consequences for

⁷⁶ Erdem WDT, p. 14.

Dr. Israel's as well as his own regressions of accounting for "influential observations," observations "that are, in a precise statistical sense, far from (or different from) all other observations."⁷⁷

- (80) Based on the results of these "refinements," Dr. Erdem concludes that "Dr. Israel's results are extremely sensitive to including the distant subscribers as a variable in the model, even though it is a variable that is relevant and practically important" and that "the addition of distant subscribers and non-linear transformations are corrections to Dr. Israel's model, as these models better represent reality and provide a better statistical fit."⁷⁸
- (81) Unfortunately, not only do Dr. Erdem's econometric analyses do a worse job of "represent[ing] reality," but they show a lack of consideration of the underlying economics of the behavior he is seeking to analyze, rendering them and his conclusions faulty and unreliable. Furthermore, they introduce variables that materially influence the interpretation of key regression coefficients in ways that themselves predict the effects he finds on Dr. Israel's results.

III.C.2. Dr. Erdem's variable measuring the "number of distant subscribers" does not measure what he thinks it does, has no economic justification, and biases his regression coefficients in expected ways

III.C.2.a. Introduction

- (82) Dr. Erdem's most substantive change to Dr. Israel's regressions, and one that is present in all but one of the additional regression results he presents, is to include a variable he creates called "the number of distant subscribers."
- (83) Dr. Erdem concludes that "[c]onceptually, both the number of subscribers and the number of distant subscribers could be relevant variables for the model" and, based on this, adds a variable he creates called the "number of distant subscribers" to Dr. Israel's model and re-estimates it. 80 He neglects to mention that *his* "distant subscribers" variable, while based on the CDC variable of the same name, is *not* the same. After including his "distant subscriber" variable, he finds that all the coefficient estimates on programming minutes either cannot be statistically distinguished from zero or become negative, implying zero royalty shares for all program categories. Based on this, he concludes, "Dr.

⁷⁷ Erdem WDT, p. 17.

⁷⁸ Erdem WDT, pp. 16-17.

⁷⁹ Erdem WDT, p. 17.

Erdem WDT, p. 15. See also Erdem WDT, Exhibit 12, p. 44. The results of Dr. Israel's original model (with only lagged subscribers) are reported in the first column of Dr. Erdem's Exhibit 12 ("Model 0A") and the results of his extension (including lagged subscribers and lagged "distant subscribers") are reported in the third column of his Exhibit 12 ("Model 1A").

Israel's results are extremely sensitive to including distant subscribers as a variable in the model, even though it is a variable that is relevant and practically important."81

(84) In fact, including his "distant subscriber" variable has the econometric effect of *double-counting* distant signal minutes. It is therefore no surprise that it "pulls down" (i.e. makes more negative) Dr. Israel's estimated value-per-program minute for most of the program categories. His conclusions about the sensitivity of Dr. Israel's analysis are therefore unfounded.

III.C.2.b. Dr. Erdem's "distant subscriber" variable confounds system-level subscriber data with subscriber-group-level subscriber data

- Or. Erdem's "distant subscriber" variable is based on a variable of the same name calculated by CDC. CDC calculates its distant subscriber variable based on a CSO's reporting of receipts and distant signal carriage at the subscriber-group level. Specifically, for each distant signal carried by a CSO, CDC defines the number of distant subscribers as the proportion (by receipts) of the CSO's total subscribers that receive the distant signal. Thus, if a distant signal is imported by a CSO across its entire system, then the number of distant subscribers in a subgroup is equal to the system's total number of subscribers. If instead it is imported to a subset of its subscriber groups, then the number of distant subscribers in a subgroup is the CSO's total number of subscribers multiplied by the ratio of receipts in the subgroups carrying the distant signal to the system's total receipts.
- (86) Consider as an example the Suddenlink cable system in Mountain Home, AR. It reported having 8,595 subscribers in the first accounting period of 2010 (denoted 2010-1). CDC assigned 8,595 distant subscribers to the distant signal, WGN-DT, because it was carried as a distant signal to all of the subscribers to Suddenlink's cable system. By contrast, CDC assigned 7,471 (86.9% of 8,595) distant subscribers to KARK-DT because it was carried as a distant signal to subscriber groups with total receipts representing 86.9% of the system-wide receipts.
- (87) In total, the Suddenlink cable system carried 4 distant signals, two of which (including WGN-DT) were carried system-wide, and two of which (including KARK-DT) were carried to 86.9% (or 7,471) of its 8,595 subscribers. CDC calculates the number of distant subscribers for each distant broadcast signal in each subscriber group within each system. As such, it is not possible to use CDC's number of distant subscribers in a system-level regression, as Dr. Erdem claims to do, without first aggregating this variable to a single number for each cable system. Doing so, however, would change the definition of the variable to a new variable whose interpretation may be fundamentally different from what CDC intended.

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⁸¹ Erdem WDT, p. 16.

III.C.2.c. Dr. Erdem's "distant subscriber" variable adds up CDC "distant subscriber" values within a cable system and therefore does not measure what its name suggests

- (88) Dr. Erdem does not (indeed cannot) use CDC's reported number of distant subscribers for a system in his regressions. Instead, Dr. Erdem *adds up* CDC's number of subscriber-group distant subscribers for each CSO within each accounting period, and he uses these sums as his "number of distant subscribers" variable in his regressions.
- (89) For example, Dr. Erdem calculates his "number of distant subscribers" variable for Suddenlink in Mountain Home, AR, in 2010-1 to be 32,132.⁸² Not only is this number not the same as the number of distant subscribers in the Suddenlink system or in any of its subscriber groups, it is 3.72 times the 8,595 subscribers that were reported by Suddenlink in total.
- (90) It is clear that Dr. Erdem's "number of distant subscribers" does *not* represent "distant subscribers" or even "average distant subscribers." Rather Dr. Erdem's newly created variable is the product of a system's subscribers and the weighted number of distant signals it chose to carry. This has important implications for the economic interpretation of his regression analyses, the topic I discuss next.

III.C.2.d. Dr. Erdem's robustness regressions effectively double-count program minutes and therefore do not offer a legitimate critique of Dr. Israel's results.

III.C.2.d.i. Dr. Erdem misunderstands the purpose of an econometric analysis in this proceeding

- (91) To understand the consequences of Dr. Erdem's inclusion of his "distant subscribers" variable requires a brief consideration of the goal of an econometric analysis in this proceeding. In general, econometrics is often used for one of two broad purposes: (a) to predict a particular economic outcome and (b) to understand the effects of particular explanatory variables on a particular outcome. Both are reasonable (but very different) goals. For the goal of prediction, the focus is on finding the explanatory variables that best predict the outcome of interest, without regard (necessarily) to what those variables are or what are their individual effects on the prediction. In other words, if the goal is to predict stock prices and the price of tea in China helps, then so be it: include it in the model (and don't worry about the economic interpretation of its coefficient).
- (92) That is not the purpose in this proceeding, however. In this proceeding, experts are using econometric analyses to help the Judges determine the relative marketplace value of the distant signal programming that was actually chosen and paid for by CSOs in 2010-2013. The dependent variable

Recall from Paragraph (87), *infra*, that the Suddenlink system in the example carried four distant broadcast signals, two to all 8,595 of its subscribers and two to what the CDC estimated as 7,471 of its subscribers. 2 x 8,595 + 2 x 7,471 = 32,132.

⁸³ With weights for each distant signal given by the share of receipts (measured as a number between 0 to 1) received by the system in the subgroups to which it is carried.

in these regressions, the royalties cable operators pay for the carriage of the distant signals, are informative of this relationship as they reveal overall market value for distant signals. The key explanatory variables in this relationship, the minutes of programming of the various types carried on distant signals, are informative as the impact they have on royalties reveals the *relative* market value of each programming type. Other explanatory variables are included in the model to control for other possible determinants of cable operator royalties. This helps improve the statistical fit of the regression (to "reduce its noise"), providing more precise estimates of the impact of programming minutes that are the focus of the analysis.

- (93) This difference in goals matters, as the approach an econometrician uses for the selection of explanatory variables and the evaluation of the regression model is very different in the two approaches. In a prediction environment, one metric often used by applied econometricians for evaluating a regression is its (adjusted) "R-squared." R-squared is a measure of how much of the variation in the dependent variable can be explained by the control or explanatory variables. He intuitive: if the goal of an econometric analysis is prediction, the more of the dependent variable's variation the model can explain, the better it will tend to predict that dependent variable in a new sample of data. What doesn't matter as much is the impact of particular covariates; it is only the overall performance of the regression (in terms of predicting the dependent variable) that matters.
- (94) Evaluating an econometric regression is very different in this proceeding, however. The goal here is to find the econometric model that can best reveal relative marketplace value. Doing so means crafting the econometric model to reflect the institutional and economic features of the environment that is generating the data being used. This is important as it enables the economic interpretation of the coefficients in a regression; indeed it is the coefficients on the key explanatory variables (the minutes of the various programming types) that feed directly into the econometrician's measure of relative marketplace value. The econometrician determines which explanatory variables to include not based exclusively on statistical criteria regarding the overall fit of the model, but also on whether there are good economic and/or institutional justifications for including that variable. He or she also

^{84 &}quot;Adjusted R-squared" adjusts this overall measure of fit to account for the number of variables the econometrician includes. This is necessary as if an econometrician has 1,000 data points and includes 1,000 covariates, the model will perfectly fit the data even if the particular covariates are meaningless. Adjusted R-squared adjusts the R-squared measure for the number of covariates, reducing it the more covariates that are added. Thus while including an additional explanatory variable will *always* increase R-squared, including one will only increase the Adjusted R-squared if the additional explanatory variable causes a statistically significant increase in the fit of the model. Econometricians have found that when the goal of the econometric analysis is prediction, using adjusted R-squared to determine whether adding additional variables improves the model's fit yields better predictions than using unadjusted R-squared as the deciding factor.

Hal Varian describes a more advanced method commonly used to improve the predictive performance of statistical models estimated on big datasets called "k-fold cross validation." *See* Varian, Hall R. "Big Data: New Tricks for Econometrics". *Journal of Economic Perspectives* – Vol. 28, No. 2, Spring 2014, pp. 7. As described there, the focus of the procedure is the ability of the model to predict the dependent variable not only within a given sample, but also on samples *other than* that used in in estimation (i.e. on an "out-of-sample" basis).

carefully considers the impact on the interpretation of each explanatory variable given the inclusion of the others, a point I return to below.

(95) Dr. Erdem confuses the two goals of regression analysis throughout his report. In particular, he appears to evaluate whether or not to include variables, including his "distant subscriber" variable, not based on whether it makes economic sense (i.e. whether including the variable helps the econometric specification better fit the institutional and economic environment generating the data, leaving unaffected the interpretation of key parameters of interest) but only on whether it has a statistical effect (i.e. whether the variable is itself statistically significant or increases the overall adjusted R-squared in the regression). As I show in what follows, Dr. Erdem's use of a purely statistical approach to motivate the inclusion of his "distant subscriber" variable is a fundamental mistake that changes the interpretation of his regression coefficients in a way that renders his criticisms meaningless.

III.C.2.d.ii. Dr. Erdem's "distant subscriber" variable double-counts programming minutes, with predictable effects on their coefficients

- (96) With this context in mind, I can now explain the implications for Dr. Erdem's econometric regressions of including his "distant subscribers" variable. First, recall that a key (but unstated) component of his "distant subscribers" variable is the (weighted) number of distant broadcast signals carried by the system. Because the royalty paid by CSOs increases in the number of distant signals they carry, the introduction of this variable in his regression necessarily produces a *formulaic* positive relationship between a system's royalties and Dr. Erdem's "distant subscribers" variable. It is no surprise, then, that his "distant subscribers" always enters his regressions with a positive coefficient. 87
- (97) Notably absent from Dr. Erdem's report is any discussion of the *economic rationale* for adding his measure of "distant subscribers." His only discussion of this specification decision is to note that "both the number of subscribers and the number of distant subscribers could be relevant variables" and he therefore chooses to include both. 88
- (98) Also notably absent from Dr. Erdem's report is any discussion of how the addition of his "distant subscribers" might alter the *interpretation* of the coefficients in Dr. Israel's model. This is critically

As Damodar Gujarati warns about Adjusted R-squared in his widely-used econometrics textbook, "Sometimes researchers play the game of maximizing [Adjusted R-squared], that is, choosing the model that gives the highest [Adjusted R-squared]. But this may be dangerous, for in regression analysis our objective is not to obtain a high [Adjusted R-squared] per se but rather to obtain dependable estimates of the true population regression coefficients and draw statistical inferences about them." Gujarati, D., "Basic Econometrics, 4th Edition", McGraw-Hill, 2003. Section 7.8, pp. 222-223.

⁸⁷ Erdem WDT, Exhibit 12, p. 44.

⁸⁸ Erdem WDT, p. 15.

important, as the interpretation of the impact of any one variable "controls for" the impact of all of the others. 89

- (99) An example illustrates how the addition of even a single variable can profoundly change the interpretation of a coefficient in an econometric regression. Suppose an econometrician was interested in the impact of an individual's annual income on the decision to own a car. Using a sample of household-level data, she might run a regression of each person's car ownership (measured as either a 0 or a 1) on their annual income and additional control variables, for example whether they live in a city, the size of their household, their age, etc. In such a regression, one would expect income to have a positive effect on car ownership: cars are useful but expensive goods and higher-income individuals are more able to pay for them. Suppose the econometrician then decided also to add a measure of the person's *wealth*. This is reasonable as low-income individuals with high wealth may also choose to own cars and the econometrician may wish to capture this possibility in her analysis.
- (100) It would be unsurprising if the coefficient on the income variable became less positive or even statistically insignificantly different from zero once wealth was added to the regression. This is because the *interpretation* of the income coefficient is very different in the two regressions. In the first regression, one should interpret it as measuring the impact of an increase in income on an individual's decision to own a car. (One could call this the "normal" interpretation.) In the second regression, however, the interpretation of the income coefficient changes: it is now interpreted as the impact of an increase in income on the individual's decision to own a car *among individuals with the same wealth*. If it is wealth rather than income that ultimately influences car decisions, then income wouldn't influence car ownership *at all* once one accounts for the impact of an individual's wealth on their ownership decision. In such an environment, its coefficient in the second regression would likely be statistically indistinguishable from zero. As illustrated by this example, interpreting regression coefficients must be done very carefully when you have multiple variables that measure similar phenomena.
- (101) Dr. Erdem's "refinements" to Dr. Israel's regressions introduce just this kind of problem of interpretation. The reason is that important variation in Dr. Erdem's "distant subscribers" is caused not by the number of subscribers to a cable system but by the (weighted) number of distant signals. Thus when the data compare the royalties between two systems, the second of which has one more distant signal then the first, not only are the programming minutes carried on the second system higher, but so too are Dr. Erdem's "distant subscribers."

⁸⁹ For more on this point, see the discussion in my direct testimony (Crawford WDT, ¶98).

This effect is mediated by the fact that different numbers of weighted distant signals are multiplied by a cable system's subscribers, but this is just a complicating factor. For expositional simplicity, I ignore this effect; none of my qualitative conclusions would be affected by accounting for it.

- (102) The correct interpretation of the key coefficients on the programming minute variables in Dr. Erdem's supplementary regressions are therefore very different than their interpretation in Dr. Israel's original regression. In Dr. Erdem's regression, they should be interpreted as the impact of an increase in the programming minutes of each type of programming, controlling for the weighted number of distant signals multiplied by subscribers.
- (103) Conceptualizing a change in minutes "controlling for the product of weighted distant signals and subscribers" is a complicated thought exercise, but its implications for Dr. Israel's key regression coefficients are easier to see. Consider the impact on royalties of a system's decision to carry one additional distant broadcast signal on all of its subgroups. This will change both the number of programming minutes carried by the system (according to the portfolio of types of minutes on that distant signal) as well as the weighted number of distant signals. Because subscribers are necessarily positive and the coefficient on "distant subscribers" is positive, the regression will necessarily attribute some if not all of the increased royalties to the increase in the "distant subscribers" and *not* to the additional programming minutes. This will *generally lower* the estimated value of those programming minutes.⁹¹ Indeed, comparing the coefficient estimates in Dr. Erdem's Model 0B (without his "distant subscribers" variable) and his Model 1B (with it), one sees exactly this pattern: all but one are less positive.
- (104) In a nutshell, Dr. Erdem's inclusion of "distant subscribers" *double-counts* the impact of changes in programming minutes on royalties that arise due to differences across systems in the number of carried distant signals. Because of this, his conclusion that "Dr. Israel's results are extremely sensitive to including the distant subscribers as a variable in the model, even though it is ... relevant and practically important" is simply wrong. ⁹² Dr. Israel's results *are* sensitive to the inclusion of Dr. Erdem's "distant subscriber" variable, but for good reasons: it is measuring a thing very similar to the programing minutes that are of interest in this setting. As such, Dr. Erdem's argument does not represent a legitimate critique of Dr. Israel's regression results and should be disregarded.

III.C.3. Dr. Erdem's nonlinear transformations of certain explanatory variables has no economic justification and further muddles the interpretation of his parameters

(105) After describing his conclusions regarding the inclusions of his "distant subscribers" variable, Dr. Erdem next turns to "variable transformations (i.e., [the] inclusion of nonlinear terms)." In particular, he explores the consequences for Dr. Israel's analysis of including further covariates that

⁹¹ This relationship won't necessarily hold for *every* programming type coefficient due to the way regressions account for the idiosyncratic correlation patterns in the programming minutes, weighted number of distant signals, number of subscribers, and other control variables in the regression.

⁹² Erdem WDT, p. 14.

⁹³ Erdem WDT, p. 16.

- accommodate nonlinearities in four variables: Dr. Israel's lagged subscribers, lagged total activated channels, and total broadcast channels, as well as his lagged "distant subscribers."
- (106) After presenting results from specifications including various powers-of-log transformations of these variables and demonstrating that the coefficients on the programming minutes from them imply zero royalty shares for at least some claimant groups, he concludes "The three models I present in Models 1A-4A [sic] not only present that estimated coefficients may change significantly with relatively minor model specifications, but they also incorporate important and necessary additions to the model. In fact, the addition of distant subscribers and non-linear transformations are corrections to Dr. Israel's model, as these models better represent reality and provide a better statistical fit."
- (107) As was the case for his analysis of his "distant subscribers" variable, Dr. Erdem takes an inappropriately statistical, prediction-oriented approach to his variable selection. Despite his completely unfounded claim that "these models better represent reality," there is no discussion of how the inclusion of such variables map better into the institutional and economic environment Dr. Israel's regression is seeking to describe. ⁹⁵ Nor is there any discussion of the implications such specifications have for the interpretation of the critical coefficients on the programming minutes.
- (108) As all of these specifications include not only a linear measure of his "distant subscribers" variable but some nonlinear function of it as well, each of these regressions now "double-and-log-power-counts" minutes. While it is impossible to have a precise intuition about what this should do to the values of the key parameters on the programming minutes, it is a further example of Dr. Erdem's double-counting (and more) of programming minutes, invalidating his alternative regressions as a useful tool for evaluating the relative value of programming. For the same reasons as in the previous subsection, Dr. Erdem's criticism of the instability of Dr. Israel's key parameters in response to the addition of nonlinear explanatory variables is an invalid critique of Dr. Israel's regression, and of "Waldfogel-type" regressions in general.

III.C.4. Dr. Erdem provides no reasons for dropping the observations he identifies as influential

- (109) A final example of Dr. Erdem's inappropriately statistical rather than economic approach to analyzing Dr. Isreal's regression is his analysis of "influential observations" in Dr. Israel's data.
- (110) Dr. Erdem highlights that regressions using Ordinary Least Squares (OLS) techniques may be sensitive to particular observations in one's dataset and that there exist statistical methods to identify

⁹⁴ Erdem WDT, p. 17.

⁹⁵ Erdem WDT, p. 17.

such "influential observations." He "appl[ies] th[ese] criteria to Dr. Israel's sample" and re-estimates his and Dr. Israel's models.⁹⁶

- (111) Based on his re-estimation, he finds that one of his models (Model 4B) provides estimates of royalty shares "broadly comparable to the results from both the Bortz and Horowitz surveys," concluding that "[a]lthough there are strong reasons to doubt that comparability of the results is much more than a coincidence, I present them for whatever weight the Judges might choose to give them."
- (112) Dr. Erdem's decision to drop influential observations from Dr. Israel's regressions is simply poor econometric practice, for two reasons. As described in a widely used econometrics textbook, care must be taken when dealing with influential observations:⁹⁸

Once influential observations have been identified it is tempting just to throw them away. *This would be a major mistake* [emphasis added]. Often influential observations are the most valuable observations in a data set.

- (113) Dr. Erdem's first mistake is to fail to analyze *why* the identified observations are influential. While he correctly suggests "it is up to the researcher to understand what makes these observations influential," he neglects to actually do so.
- (114) Dr. Erdem follows with a second mistake. He ultimately chooses to drop the influential observations from his econometric analyses, *but still uses them to calculate royalty shares*. If he believes the observations he identified as influential are so because of a data error (he does not say so one cannot know), then they should be dropped from both the regression analysis *and* the share calculations. Dropping them from the former but keeping them in the latter simply *can't* be correct. For both of these reasons, all Dr. Erdem's regression analyses accounting for influential observations, and his conclusions about them, should also be disregarded.

⁹⁶ Erdem WDT, pp. 17-18.

⁹⁷ Erdem WDT, p. 18.

⁹⁸ Kennedy, Peter. A Guide to Econometrics, Sixth Edition. Simon Fraser University. Blackwell Publishing, 2008.

DECLARATION OF GREGORY S. CRAWFORD

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: $\frac{9/15/2017}{}$

Gregory S. Crawford

Certificate of Service

I hereby certify that on Monday, February 12, 2018 I provided a true and correct copy of the Rebuttal Testimony of Gregory S. Crawford, PhD, WRS-A; 9/15/2017 to the following:

Multigroup Claimants, represented by Brian D Boydston served via Electronic Service at brianb@ix.netcom.com

Devotional Claimants, represented by Benjamin S Sternberg served via Electronic Service at ben@lutzker.com

Spanish Language Producers, represented by Brian D Boydston served via Electronic Service at brianb@ix.netcom.com

Joint Sports Claimants, represented by Iain McPhie served via Electronic Service at iain.mcphie@squirepb.com

National Public Radio, Inc. (NPR), represented by Gregory A Lewis served via Electronic Service at glewis@npr.org

SESAC, Inc., represented by John C. Beiter served via Electronic Service at jbeiter@lsglegal.com

Broadcast Music, Inc. (BMI), represented by Brian A Coleman served via Electronic Service at Brian.Coleman@dbr.com

MPAA-represented Program Suppliers, represented by Gregory O Olaniran served via Electronic Service at goo@msk.com

Public Broadcasting Service (PBS), represented by Ronald G. Dove Jr. served via Electronic Service at rdove@cov.com

Canadian Claimants Group, represented by Lawrence K Satterfield served via Electronic Service at Iksatterfield@satterfield-pllc.com

American Society of Composers, Authors and Publishers (ASCAP), represented by Sam Mosenkis served via Electronic Service at smosenkis@ascap.com

Signed: /s/ Ann Mace



TESTIMONY OF MICHAEL EGAN

COPYRIGHT ARBITRATION ROYALTY PANEL 1998-1999 COPYRIGHT ROYALTY DISTRIBUTION PROCEEDING

DECEMBER 2002

I am submitting this testimony to the Copyright Arbitration Royalty Panel (the "Panel") on behalf of the Joint Sports Claimants ("JSC"). I understand that the proceeding before the Panel involves the distribution of the compulsory licensing royalties paid by cable systems to carry the non-network programming on distant signals in 1998 and 1999. I also understand that in distributing the royalties, the Panel will attempt to ensure that each group of eligible copyright owners receives the same share of royalties that it would have received in a free marketplace with no compulsory license. The purpose of my testimony is to provide the Panel with the views of a cable industry executive who was responsible for purchasing programming, including distant signals, during the years involved in this distribution proceeding.

I. <u>PROFESSIONAL BACKGROUND</u>

I have had more than twenty years of experience in the cable television industry. Throughout this period, I have held several senior management positions with both programming and marketing responsibilities. This experience culminated in my cofounding a cable multiple system operator ("MSO"), Renaissance Media Holdings ("Renaissance"), in 1997.

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I served as Executive Vice President of Renaissance from October 1997 through April 1999. During this time, Renaissance purchased and managed eight cable systems

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which were subsequently sold to Charter Communications. I led the corporate and field efforts with respect to programming, pay-per-view, advertising sales and new business development for the Renaissance systems. I was also responsible for copyright compliance and compliance with the 1992 Cable Act provisions relating to must carry and retransmission consent.

Prior to co-founding Renaissance, I was employed as Director of Programming, and ultimately promoted to Senior Vice President, Programming and Product Development, at CableVision Industries ("CVI"), another cable MSO. I joined CVI in 1980 and left when the company was sold in 1996. During this time, CVI grew to become the eighth largest cable television company in the United States with approximately 1.3 million customers in 65 cable systems located in eighteen states.

At CVI, my responsibilities included, among other things, programming decisions, channel lineup development, retransmission consent and must carry compliance. As the head of programming for the company, I spent close to \$100 million annually buying programming. I was also responsible for copyright compliance, the pay-per-view business, advertising sales and new product development. In addition, I was part of the management team at CVI that dealt with rate and other new regulation resulting from the 1992 Cable Act.

My responsibilities at Renaissance and CVI required me to be familiar with the variety, value, and cost of the programming available to the cable industry as well as the various business considerations underlying decisions to retain or to change a programming

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service. I also worked regularly with the issues related to the must carry, retransmission consent and rate regulation requirements imposed by the 1992 Cable Act and implementing FCC regulations.

Before joining CVI, I served as a producer/production manager with Satori Productions in New York, New York, from 1978 through 1980, and was a high school English and Broadcasting teacher from 1975 to 1977. I received a Bachelor of Science degree from SUNY, Albany, N.Y. in 1974 and received my Masters of Science degree from the S.I. Newhouse School of Telecommunications, Syracuse University in 1978. I have been an invited speaker or panelist at numerous CTAM, NCTA, and NFLCP conferences, and I have been elected twice to the National Academy of Cable Programming Board of Directors. I have also received the Cable Ace Award. Currently, I am involved in consulting projects for several cable and satellite television programmers, technology companies, and operators with respect to technology, programming, and development issues. My clients include Comcast Corporation and Microsoft.

II. DISCUSSION

I have reviewed the results of the 1998 and 1999 cable operator survey conducted by Bortz Media. The survey shows that the respondents would have allocated approximately 40% of their distant signal program budgets to the live professional and

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collegiate team sports programming on distant signals. I believe that these findings are consistent with my experience in the cable industry.¹

It is commonly known in the industry that sports programming is the most expensive genre of non-premium programming. Cable operators generally pay more for sports programming than other types of programming on cable networks. I believe that, absent the compulsory license, cable operators also would spend more for sports programming on distant signals than other types of distant signal programming.

Sports programming is valuable because it is unique and appeals to a set of highly motivated and loyal cable subscribers. Sports fans are among the most vocal cable subscribers. Their willingness and propensity to complain loudly if the cable system lacks certain sports programming or makes changes to existing sports programming means that sports programming and its fans are very influential pieces of the programming puzzle. Cable operators are generally unwilling to make changes in programming that they know will receive a loud and angry response from their subscribers.

Sports programming via cable offers two unique values to cable subscribers (and operators). First, unlike most other types of programming, sports programming is

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¹ I understand that the Panel in the 1990-1992 proceeding expressed concern that the cable operators surveyed by Bortz could not adequately respond to and value the variety of programming offered on distant signals in the course of a short phone call. Given my daily experience with programming decisions while at Renaissance and CVI, I do not share that concern. The types of respondents surveyed by Bortz (general managers, programming managers, marketing executives) are typically familiar with and involved in programming issues. They could, therefore, respond fully and accurately without advance preparation.



generally exclusive to the station televising the event. If a sports fan/cable subscriber does not have that channel available to him, there usually is no alternative means of viewing it. Second, the actual sporting event is shown live; it is "first run," timely and has a perishable nature. If he can not see his team play in real time on his cable system, he is likely to complain and cable operators are, therefore, reluctant to remove distant signals that provide this valuable sports programming.

Sports programming also has significant promotional value. That value is illustrated in a programming decision that my partners and I made while at Renaissance with respect to our newly-acquired cable system in Jackson, Tennessee. As the new cable operators, we wanted to do something significant to gain the immediate support and enthusiasm of the Jackson community. In order to help retain the existing cable subscribers in Jackson and to attract new subscribers, we brought in a distant signal, WGN, out of Chicago, Illinois in 1998. The decision to carry WGN was made because of the sports programming available on WGN. WGN carried two major league baseball teams, the White Sox and the Cubs. Jackson is the home of a Cubs minor league team, the Diamond Jaxx, so there was an especially strong demand for Cubs baseball on WGN. Additionally, WGN also offered Chicago Bulls games that featured one of the most popular basketball players of all time, Michael Jordan. The Bulls were NBA champions six times in the 90's alone. We recognized the unique value of the sports on WGN and added it to our system in Jackson. Furthermore, we viewed the compulsory licensing royalty we

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paid for WGN to be quite reasonable in comparison to what we were required to pay for other sources of sports programming.²

With the conversion of WTBS into a cable network in 1998, WGN became the most significant distant signal in the marketplace. Where I exercised program buying authority, I "bought" WGN primarily for its significant sports programming. I believe that other cable operators also purchased WGN primarily for its sports programming.

I declare under the penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

11-26-02

Date

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² We were able to carry WGN without obtaining its consent. The 1992 Cable Act requires cable operators to obtain the consent of commercial broadcast stations that they wish to carry, other than satellite-delivered superstations such as WGN. CVI consistently obtained retransmission consent from distant stations without paying any cash compensation to those stations. In my experience, these stations were generally more interested in carriage than compensation.

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Filing Date: 02/19/2018 12:01:01 PM EST

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

In re

DISTRIBUTION OF CABLE ROYALTY FUNDS

CONSOLIDATED PROCEEDING NO. 14-CRB-0010-CD (2010-13)

TESTIMONY OF JEFFREY S. GRAY, PH.D.

December 22, 2016

Amended March 9, 2017 Corrected April 3, 2017

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I. QUALIFICATIONS

- 1. I, Jeffrey Gray, am an economist and President of Analytics Research Group, LLC ("ARG"). ARG provides expert analysis concerning economic, statistical and data issues.
- I received training in economics and statistics at the University of Pennsylvania, 2. where I earned a Ph.D. in economics. In 1991, I was appointed to a one-year position on the staff of the President's Council of Economic Advisers, where I concentrated on the economic impact of government policies and regulation. From 1993 to 1997, I served on the faculty of the University of Illinois, where I taught graduate and undergraduate courses covering survey techniques, demand analysis, labor economics, and statistics. My research has been published in some of the top peer-reviewed journals in the economics profession, including *The American Economic Review*. I have received grants to pursue my research from the U.S. Department of Labor, the U.S. Department of Agriculture, and the Research Board of the University of Illinois. I have presented my research findings before a variety of seminars at universities, meetings of professional societies and conferences on specialized topics in the United States and abroad. Throughout my professional career, I have been asked to serve as a referee for leading economics journals, such as *The American Economic Review* and the *Review of* Economics and Statistics, concerning the appropriate application of economics and statistics.
- 3. I have served as a consultant for companies, law firms, and government agencies on a variety of economic and statistical issues related to antitrust, copyright and patent

infringement, and complex commercial disputes. My consulting work has included analyzing economic markets as well as valuing copyrighted material and assessing efficient price and advertising levels. I have been engaged by cable system operators ("CSOs") to analyze the content and viewership of certain channels and by music performance rights owners to determine the economic value of the right to perform copyrighted music. I have provided expert testimony before the Copyright Royalty Judges ("Judges"), as well as in state, federal and international courts, and have presented my research methodology and analytical findings before the Securities and Exchange Commission, the Texas Commissioner of Insurance, and the New York and Massachusetts State Offices of the Attorney General.

4. My *curriculum vitae*, which includes a list of my publications in the last ten years, and a list of cases in which I have testified in the last four years, is attached as Appendix A. This report is based upon information currently available to me; I reserve the right to supplement this report should additional information be made available.

II. BACKGROUND AND OVERVIEW OF ROYALTY ALLOCATION PROCESS

- 5. I understand that the purpose of this proceeding is to allocate the 2010, 2011, 2012, and 2013 cable royalty funds ("2010-2013 Cable Royalties") paid by CSOs under statutory (compulsory) licenses established by Section 111 of the Copyright Act ("Section 111").
- 6. Compulsory licenses allow CSOs to retransmit broadcast television signals out-of-market (*i.e.*, on a distant basis) without the need to negotiate individual private license

agreements with the multitude of copyright owners whose programs air on those signals. Economists refer to the time and expense associated with negotiating such private license agreements as transaction costs. Section 111 effectively eliminates the transaction costs that would occur in a market without the compulsory license and sets the rates for the compulsory license fees paid by the CSOs. These statutorily-set fees are subject to periodic adjustments. CSOs pay the licensing fees based primarily on the number and type of distant stations each CSO chooses to carry. After collecting the royalty payments, the Copyright Office distributes them among eligible copyright owners of compensable programs aired on the distant signals (or their representatives), either by agreement among the claimants, or pursuant to the determination in a cable royalty distribution proceeding held before the Judges.

7. The CRT decided in 1980 to conduct its distribution proceeding in two phases. In Phase I, the Judges allocated royalties among broad categories of self-organized claimants.⁴ In Phase II, royalties have been divided among individual claimants or their

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¹ The periodic adjustments to the royalty fee rates were initially made by the Copyright Royalty Tribunal ("CRT"). Following abolition of the CRT, the adjustments were overseen by Copyright Arbitration Royalty Panels ("CARPs") appointed by the Librarian of Congress. The CARPs were subsequently replaced by the current system of Judges.

² The compulsory license fee for CSOs was based upon the number of "distant signal equivalents" ("DSEs") that a cable system imported, valuing a distant independent station as one and a network-affiliated station or educational station as 1/4. In general, the number of DSEs carried by a CSO is multiplied by a DSE rate to establish the percentage of their gross revenues charged for importing distant television signals.

³ Eligible compensable programs are non-network broadcast programs aired on simultaneously retransmitted distant signals during the 2010-2013 cable royalty years.

⁴ Historically, for cable Phase I Proceedings there have been eight broad categories of programming: (1) Program Suppliers; (2) Joint Sports Claimants ("JSC"); (3) Commercial Television Claimants ("Commercial Television"); (4) Public Television Claimants ("Public Television"); (5) Devotional

representatives *within* each of the broad program categories. However, as explained by the Judges in this proceeding, nothing in the Copyright Act or the Judges' regulations⁵ requires that the proceeding be split into multiple phases.⁶ Indeed, the definitions of the broad categories in the historical Phase I Proceedings, and in the current proceeding, are based on an agreement between the participating claimants and not, to my understanding, based on any market-accepted definition of programming.

8. While the broad category definitions were agreed to by the parties, each allocation participant's programming claims are simply an aggregation of the distantly retransmitted individual programs that fall within each agreed claimant category. Some of the agreed upon claimant category definitions may appear counter-intuitive to the market. For example, the Program Suppliers category is comprised of producers and/or distributors of syndicated series, movies, specials, and non-team sports, excluding devotional programs. Thus, certain sports programming that commonly airs on distant broadcast signals such as NASCAR racing, professional bowling, golf, and the Olympics fall into the Program

Claimants ("Devotionals"); (6) Canadian Claimants Group ("Canadian Claimants"); (7) Music Claimants; and (8) National Public Radio ("NPR"). The Judges adopted these eight categories of programming for this proceeding as well. *See* Notice of Participant Groups, Commencement of Voluntary Negotiation Period (Allocation), and Scheduling at Exhibit A (November 25, 2015) ("Notice").

⁵ Chapter III of title 37 of the Code of Federal Regulations.

⁶ See Notice at 3; see also Order Regarding Discovery at 4, n.7 (July 21, 2016).

⁷ See Notice at Exhibit A (describing the mutually exclusive Agreed Categories as "non-exhaustive descriptions of the types of programs or other creative works that fall within each of the agreed categories of claimants (Agreed Categories) to which categories the Judges may approve an allocation of cable retransmission royalties.").

Suppliers category and not the Joint Sports Claimants ("JSC") category, which consists of only live telecasts of professional and college team sports.

9. In addition to sports programming falling into more than one claimant category, certain retransmitted programming that is broadcasted on public television stations, ⁸ as well as on Canadian television stations, could belong to the Program Suppliers category.

III. ECONOMIC VALUE OF PROGRAMMING: RELATIVE MARKET VALUE DEPENDS ON VIEWERSHIP

10. The criterion for dividing the annual royalty pools among claimants is the "relative market value" of the copyrighted programs.⁹

A. Application of the Relative Market Value Standard

11. Relative market value corresponds to the price at which the right to retransmit a program carried on a distant broadcast signal would change hands between a willing buyer (a CSO) and a willing seller (a copyright owner), neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts. ¹⁰ The "willing buyer" in this hypothetical negotiation is the CSO because it chooses which

⁸ See 66 Fed. Reg. 55653, 55655 n.3 (October 28, 1996) ("An example of a program which would not be in the Public Broadcasting Service category, because it fell within another category, would be the movie 'Platoon' that was broadcast by a PBS station. That program would properly fall within the Program Suppliers category.").

⁹ See 75 Fed. Reg. 57063, 57065 (September 17, 2010).

¹⁰ This definition is consistent with the definition of *fair market value* written by the U.S. Supreme Court: "The fair market value is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts." *United States v. Cartwright*, 411 U. S. 546, 93 S. Ct. 1713, 1716-17 (1973).

bundles of programs—signal channels—to retransmit on a distant basis. CSOs offer bundled distant signal channels, cable channels, local broadcast channels and pay-perview channels in different packages to existing and potential subscribers at varying prices. While CSOs base their channel and carriage bundling decisions on attracting and retaining subscribers, other cost considerations factor into their decisions regarding which distant channels to retransmit and how to bundle them.¹¹

12. CSOs do not offer individual programs on broadcast stations to their subscribers. Instead, they offer an array of different bundles of stations, or "tiers," as well as promotional packages, to attract and retain their subscribers. However, little information is available regarding the pricing and packaging done by specific CSOs or the competing offerings available to potential subscribers of a particular cable system. Further, sufficient data are not available to model and analyze why consumers choose to subscribe, or continue to subscribe to a particular cable system. Since adequate data are not available to model consumers' subscription decisions, it follows that sufficient data are unavailable to properly model CSOs' buying decisions, including that of distantly retransmitted programming, in their efforts to attract and retain customers.

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¹¹ As the Judges noted in the 2004-2005 Cable Phase I Decision, "[t]he rationale for the cable operator's decision concerning which channels to group in any tier offering and at what price, may depend not only on the impact on direct subscriber revenues, but also on such factors as advertising revenues associated with cable network channels, the relative license fee costs of various cable network channels, physical capacity constraints on the number of channels that can be transmitted over a particular cable system and even the direct ownership interests of the cable system in programming content on a given cable network." 75 Fed. Reg. at 57066. This rationale also applies to satellite carriers who, like CSOs, are program retransmitters and face the same economic goal as CSOs.

- 13. It is axiomatic that consumers subscribe to a CSO to watch the programming made available via their subscriptions. The more programming a subscriber watches, the happier the subscriber is, and the more likely she will continue to subscribe, all else equal. Therefore, a measure of the happiness, or "utility," an individual subscriber gets from a specific program is the number of minutes that subscriber spent viewing the program offered to him or her by the CSO. A measure of the utility all subscribers get, in total, from a specific program is the total level of subscriber viewing of the program. Thus, even though CSOs are the buyers of the programming bundles, a reasonable measure of the relative market value of a retransmitted program is the relative level of subscriber viewing of that program. The higher the subscriber viewing, all else equal, the greater the subscribers' utility and the greater the CSOs' retention of subscribers.
- 14. Thus, the relative market value of an individual program ultimately depends upon the consumption of the programming as measured by its level of viewing by subscribers. As explained by actual copyright owners, audience size as measured by viewership is central when making licensing deals with broadcast stations and cable networks in the world outside the compulsory licensing scheme. Moreover, in an attempt to attract and retain customers, CSOs want to carry stations with high viewership programming such as off-network syndicated television series that originally attracted a loyal following in their

¹² Economists refer to this axiom underlying consumer preferences as the axiom of "nonsatiation." *See*, Economics and consumer behavior, Angus Deaton and John Muellbauer, 1980, p.28.

¹³ See MPAA Written Direct Statement Vol. II, Prior Designated Testimony, at Tab A, Docket No. 2007-3 CRB CD 2004-2005, Written Direct Testimony of Alex Paen, pp. 11-12 (filed June 1, 2009).

network runs and continue to do so in syndication.¹⁴ They also desire to carry stations with high viewership programming, such as first-run syndicated programs that they believe will garner satisfactory audience levels.¹⁵

15. Since this proceeding involves allocating fixed royalty pools as part of a compulsory licensing scheme, it is appropriate to consider pertinent information concerning the relative economic value of programming, namely, program consumption as measured by actual program viewing. Purposefully ignoring estimates of actual viewing or ratings could lead to individual copyright owners, as well as categories of copyright owner representatives, of valuable programming receiving disproportionately small royalty awards compared to the relative market value of their copyrighted programming.

B. Measuring Relative Market Value: Volume and Viewership

16. Subscriber preferences are revealed by which distant stations and programs they choose to watch. Below, I discuss two measures of relative economic value of programming: programming volume and programming viewership.

1. Volume

17. Holding costs constant, CSOs will choose to carry distant signals with programming that will attract and retain as many subscribers as possible. In theory, the rational (*i.e.*, economic-optimizing) CSO will choose to carry distant signals with the

¹⁴ See Written Direct Testimony of Alex Paen, p. 12.

¹⁵ See id. at pp. 5-6, 9-10.

most preferred programming airing at the most preferred times. The total volume of minutes of programming retransmitted by CSOs effectively represents the volume of programming purchased by the CSOs, albeit in a regulated setting. Therefore, total program volume represents rational CSOs' choices and provides a measure of the relative economic value of the programming to the CSOs.

18. While total program volume provides useful information concerning the relative value of programming to CSOs, that measure alone is not sufficient. In general, the value of programs to the CSO and their subscribers may differ depending on the time slot during which the programs are aired. A 30-minute program aired during primetime might be more valuable to a CSO and their subscribers than an hour-long program shown in the middle of the night. Moreover, programs of identical duration shown at the same time of day may have very different values to CSOs and their subscribers. That is, programming volume alone does not convey a complete picture of the relative value of the programs. The reason volume alone is an insufficient measure of value is because it ignores audience size.

2. Viewership

19. Audience size, which is determined through program viewership, is a primary interest of programmers and therefore the most direct measure of a program's relative value.¹⁶ From the CSO's perspective, the more a program attracts subscribers to watch and to keep watching, the more valuable the program is to the CSO's net-revenue

¹⁶ Media Programming: Strategies and Practices, 8th ed., S.T. Eastman and D.A. Ferguson, 2009, p. 40.

maximizing goal of retaining and growing subscriber count. From the subscriber's perspective, relatively low viewership of a given program signifies relatively low valuation of that program. Absent the bundling of programs, economic theory implies that a program with no viewership will most likely not continue to be carried.¹⁷

- 20. Program viewership as a measure of relative market value is consistent with the economic theory of revealed preference.¹⁸ In the present context, it means a CSO's willingness to pay for a particular type of program, or the station that airs these programs, is a function of the programming's contribution to the cable system's ability to attract and retain subscribers and thereby maximize net revenue.
- 21. The two most recent Phase I rulings relied heavily on surveys of CSOs attempting to quantify the relative value of Phase I program categories. However, even cable networks routinely analyze viewing levels because they understand that this measure is the best available indicator of what attracts and retains subscribers. Moreover, surveys are fundamentally flawed if the programming categories are not correctly understood by survey respondents.
- 22. Consistent with the economic arguments described above, I analyze programming volume and viewing to determine relative market value of six broad claimant categories of individual programming: (1) Program Suppliers; (2) JSC; (3) Commercial Television;

¹⁷ See generally, Economics and consumer behavior, Angus Deaton and John Muellbauer, 1980.

¹⁸ *Id.*, p. 51-53.

¹⁹ See 75 Fed. Reg. at 57065; 69 Fed. Reg. 3606, 3609 (January 26, 2004).

- (4) Public Television; (5) Devotionals; and, (6) Canadian Claimants.²⁰ I apply a two-step approach:
 - First, I calculate measures of the relative volume of programming by claimant category. This provides good, but imperfect, indicators of the relative value of the sets of programs at issue in this proceeding.
 - Second, I calculate the relative viewership of programming by claimant
 category. This is done on a program-by-program basis, then aggregated up to
 the agreed upon broad claimant categories. As described above, given the
 available data, this is the most direct measure of relative value: if costs are
 deemed constant, higher subscriber viewership suggests higher relative market
 value of the programming.
- C. Data Relied Upon to Measure Relative Market Value of Programming

 23. I rely upon Nielsen viewing data, Gracenote, Inc. ("Gracenote") ²¹ programming

 data, and Canadian Radio-television and Telecommunications Commission ("CRTC")

 program logs, to study the volume and viewing information of compensable programs

 from 2010 through 2013. I also rely upon Cable Data Corporation ("CDC") carriage data

 that includes information on the number of CSO subscribers of each distantly

 retransmitted signal analyzed. Due to cost considerations in obtaining the Nielsen and

 Gracenote data for all stations distantly retransmitted by CSOs in every royalty year, I

²⁰ My testimony does not address an allocation to either Music Claimants or NPR.

²¹ Tribune Media Services merged with Gracenote, Inc. on June 12, 2014, as a division of Tribune Media Company. The division now operates under the Gracenote name.

selected a sample of stations retransmitted by CSOs based on a stratified random sampling methodology.²² I then requested Nielsen and Gracenote data for all these selected stations each year. Each year's list included both large and small stations in terms of the number of distant subscribers as well as fees generated. These data are described in further detail in the subsections below.

I estimated distant viewing for compensable programs for each year for the 2010-Cable Royalties using the data from the aforementioned sources.

1. Nielsen Data

- 25. Nielsen is a well-regarded and highly-used source of audience measurement information in the television industry. Prior decisions by the Judges and their predecessors have concluded that Nielsen data provides "relevant" and "reliable" measures of the number of people viewing programs retransmitted on distant signals.²³ I rely on Nielsen Local and Distant Viewing Household Meter Data for 2010-2013 ("Nielsen Household Meter Data").
- 26. The Nielsen Household Meter Data is based on a random sample of people in the United States. Nielsen Household Meter Data is collected by electronic meters attached to television sets together with individual meters held by individual household members.

²² Lists of station samples are contained in Appendix Table B. I implemented a random sampling methodology, stratified by number of distant subscribers of the stations.

²³ See, e.g., 78 Fed. Reg. 64984, 64986 and 64996 (Oct. 30, 2013); 55 Fed. Reg. 5647 (Feb. 16, 1990); 1998-99 Cable Phase I CARP Report (Oct. 21, 2003), at 44; 1990-92 Cable Phase I CARP Report (May 31, 1996), at 84.

Based upon the national data they collected, Nielsen performed custom analyses to calculate the level of local and distant viewing by cable-subscribing households to television stations, respectively, for each fifteen-minute interval (quarter hour) of the day, 7 days per week, and 365 days per year for each year 2010-2013.²⁴ From their estimates of total metered viewing, Nielsen extracts both the local and distant viewing to my samples of stations for 2010 through 2013.

2. Gracenote Data

27. The Gracenote data is a compilation of information about each program airing on each station throughout each day. The compiled information includes when the program aired; the station the program aired on; whether it was local, network, or syndicated; the program title; the episode title, if applicable; and the type of program (movie, game show, *etc.*); and so on. As a part of my analysis, I excluded as non-compensable programs airing on WGN's local feed ("WGN") that were not simultaneously broadcast on WGN's national feed ("WGNA"). Also, I excluded all programs broadcasted on ABC, CBS, and NBC networks because, as network programs, those programs are non-compensable for present purposes. I then used the Gracenote data to assign each program airing on stations in my statistical samples of stations to one of the broad agreed claimant categories.²⁵

²⁴ See Written Direct Testimony of Paul Lindstrom.

²⁵ In addition to the Gracenote data, my algorithm made adjustments to the categorization based on my review of the lists of claimed titles that were produced by claimant representatives in preliminary discovery in this proceeding, and further adjustments based upon our manual review of the titles (primarily adjustments to ensure the correct categorization of non-team sports titles).

3. CDC Data

28. The CDC data are information catalogued by CDC from statements of accounts ("SOAs") that CSOs filed with the Licensing Division of the Copyright Office semi-annually. These data include information regarding the distant signals carried, the number of subscribers receiving each distant signal, and the estimate of fees generated by each signal during years covered by this proceeding. Based on the CDC data, over 1,000 stations were distantly retransmitted by CSOs each year from 2010 to 2013.

4. CRTC Program Logs

29. The CRTC requires stations broadcasting in Canada to submit monthly program logs ("CRTC Program Logs"). These CRTC Program Logs include information such as station call signs, the program title and actual start time and end time of each program transmitted by each Canadian station, and an indicator for the country of origin of each program. I understand that programming airing on Canadian stations that originated outside the United States and which was secondarily transmitted into the United States is compensable in the Canadian Claimants category. Also, syndicated programming and movies that aired on Canadian stations which originated from the United States are compensable as Program Suppliers programs. Similarly, live telecasts of Major League Baseball, National Hockey League, and U.S. college team sports airing on Canadian

²⁶ See, Written Direct Testimony of Jonda Martin.

²⁷ See CRTC website for more information, http://www.crtc.gc.ca/.

stations are compensable in the JSC category.²⁸ I used these CRTC Program Logs to determine the country of origin of the programming that aired on the Canadian stations and assigned such programs to either the Program Suppliers, Canadian Claimants, or JSC categories as appropriate.

D. Economic Analysis: Estimating and Imputing Distant Viewing

30. To determine the relative market value of all compensable programs that aired on stations that were distantly retransmitted by CSOs, I calculate the relative distant viewing of those programs. I provide a reasonable estimate of relative distant viewing levels by relying upon the data sources described in the previous section. As I explain later in this testimony, I establish a mathematical relationship between local and distant viewing levels using various program characteristics during those years. I then extrapolate that mathematical relationship using a regression analysis to estimate distant viewing for all compensable programs each year for the 2010-2013 Cable Royalty years.

E. Relative Market Value of All Programming

- 31. Considering the various datasets described above, my analysis demonstrates the breadth of programming and the extent to which it is retransmitted in distant markets by CSOs.
 - 1. Number of Compensable Programs, Program Retransmissions, and Volume Statistics
- 32. Table 1 below present summary statistics comparing compensable programs in the six-broad claimant categories in the (1) number of retransmissions of compensable

²⁸ See Notice at Exhibit A.

programs; and (2) the volume (in minutes) of programming that aired on stations distantly retransmitted by CSOs. From 2010 to 2013, between approximately 12.3 million and 14.6 million compensable programs aired on the stations retransmitted by CSOs. This programming represented between approximately 501 million and 613 million retransmitted minutes of compensable programming.

Table	1: Levels and Shares of	Retransmissions a	nd Volume by Roya	ltv Year	
			Share of All	Minutes of	Share of All
Year	Claimant Category	Retransmissions	Retransmissions	Retransmissions	Volume
	Canadian Claimants	58,812	0.48%	2,337,432	0.47%
	Commercial Television	1,441,959	11.67%	64,434,466	12.84%
	Devotionals	960,034	7.77%	40,909,970	8.15%
2010	Program Suppliers	6,848,477	55.44%	268,348,834	53.47%
	Public Television	3,023,424	24.48%	122,528,733	24.41%
	JSC	19,693	0.16%	3,325,946	0.66%
	Total	12,352,399	100%	501,885,381	100%
	Canadian Claimants	206,553	1.42%	10,210,376	1.76%
	Commercial Television	1,482,977	10.17%	68,661,588	11.83%
	Devotionals	1,769,985	12.14%	66,802,398	11.51%
2011	Program Suppliers	7,868,472	53.99%	302,393,182	52.11%
	Public Television	3,221,460	22.10%	128,137,417	22.08%
	JSC	25,551	0.18%	4,058,349	0.70%
	Total	14,574,998	100%	580,263,310	100%
	Canadian Claimants	193,326	1.46%	7,527,287	1.33%
	Commercial Television	1,933,045	14.59%	104,885,196	18.47%
	Devotionals	710,162	5.36%	30,242,207	5.33%
2012	Program Suppliers	5,076,033	38.32%	203,067,573	35.76%
	Public Television	5,316,379	40.14%	219,327,673	38.62%
	JSC	16,325	0.12%	2,793,638	0.49%
	Total	13,245,270	100%	567,843,574	100%
	Canadian Claimants	115,240	0.81%	4,751,082	0.77%
	Commercial Television	2,040,714	14.39%	87,041,687	14.20%
	Devotionals	984,047	6.94%	39,319,381	6.41%
2013	Program Suppliers	7,192,831	50.72%	319,199,057	52.07%
	Public Television	3,818,654	26.93%	158,263,492	25.82%
	JSC	29,667	0.21%	4,483,806	0.73%
	Total	14,181,153	100%	613,058,505	100%

- 33. Across the 2010-2013 Cable Royalty years, with the exception of 2012, each claimant category's share of the total number retransmissions and the volume of retransmissions is relatively steady. In 2012, there were significantly more public television stations retransmissions in the sample as well as more sub-channels.²⁹ Many of these sub-channels were in turn retransmitted by CSOs, contributing to an increase in Public Television's share of both retransmissions and volume.
- 34. As described earlier, the relative minutes, or volume, of programming retransmitted provides an imperfect metric of the relative value of the two sets of programs. The volume measure does not take into account what time of day the retransmission took place, the number of cable subscribers who had access to the distantly retransmitted broadcast, or the number of households who watched the show. Thus, the share of viewing minutes provides a superior measure of relative value.

2. Program Viewing Statistics

35. Due to the low frequency of distant viewing and the size of the sample Nielsen uses to measure total U.S. household viewing, there are many instances of no recorded distant viewing of compensable retransmitted programs in the Nielsen Household Meter Data. However, it is possible to obtain reliable estimates of distant viewing for all retransmitted programs by also relying on Nielsen measures of household viewing in each retransmitted station's local market.

²⁹ Sub-channels are where the main channel broadcasted several separate signals on the same channel.

- 36. In order to reliably determine relative viewing minutes throughout the 2010-2013 Cable Royalty years, I employed multiple regression analysis techniques and applied my analysis to the all programs eligible for compensation. The regressions calculate the mathematical relationship each year from 2010 to 2013 between distant viewing for a program and (1) a measure of local viewing for the program, (2) the total number of distant subscribers of that station, (3) the time of day the program aired by quarter hour, and (4) the type of program aired. The regressions demonstrate that there is a positive and statistically significant relationship between local viewing and distant viewing. The greater the number of people viewing a particular program on a per capita local basis, all else equal, the higher the level of distant viewing. The regressions also show that the total number of a station's distant subscribers, the time of day the program aired, and the type of program aired, each significantly affect distant viewing.
- 37. Based on the mathematical relationship between distant viewing each year over the 2010-2013 time period and a measure of local viewing, as well as the other factors described above, I calculated a reliable measure of distant viewership for all compensable programs carried by stations in the sample for each quarter hour of every day, and for each cable and royalty year at issue in this proceeding.
- 38. I calculate each claimant category's share of total distant viewing as the sum of estimated household viewing of that category's programs divided by the sum of the estimated distant household viewing of all categories. Table 2 reports estimated distant viewing share for each cable royalty year for each claimant category. Appendix C, Table

³⁰ Appendix C, Tables C-1 through C-4 provide results from the regressions.

C-5 presents the 95% confidence intervals associated with each viewership share calculation.³¹ These viewership shares correspond to reasonable cable royalty shares.

Table 2: Distant Viewing Levels and Shares by Royalty Year							
Year	Claimant Category	Distant Viewing	Share of Distant Viewing				
	Canadian Claimants	22,577	1.96%				
	Commercial Television	181,958	15.83%				
	Devotionals	13,598	1.18%				
2010	Program Suppliers	585,521	50.94%				
	Public Television	321,335	27.96%				
	JSC	24,466	2.13%				
	Total	1,149,455	100%				
	Canadian Claimants	39,472	3.93%				
	Commercial Television	121,186	12.06%				
	Devotionals	24,497	2.44%				
2011	Program Suppliers	501,580	49.92%				
	Public Television	292,267	29.09%				
	JSC	25,803	2.57%				
	Total	1,004,805	100%				
	Canadian Claimants	37,007	3.58%				
	Commercial Television	159,938	15.48%				
	Devotionals	11,032	1.07%				
2012	Program Suppliers	373,643	36.17%				
	Public Television	430,093	41.64%				
	JSC	21,266	2.06%				
	Total	1,032,979	100%				
	Canadian Claimants	38,340	5.16%				
	Commercial Television	78,754	10.61%				
	Devotionals	8,160	1.10%				
2013	Program Suppliers	334,733	45.09%				
	Public Television	247,143	33.29%				
	JSC	35,303	4.76%				
	Total	742,433	100%				

³¹ The confidence intervals are calculated applying the bootstrap methodology. *See* Efron, B.; Tibshirani, R. (1986). "Bootstrap Methods for Standard Errors, Confidence Intervals, and Other Measures of Statistical Accuracy." *Statistical Science* 1(1), 54-77.

39. As reported in the final column in Table 2, Program Suppliers' cable viewership shares are 50.94% in 2010, 49.92% in 2011, 36.17% in 2012, and 45.09% in 2013. Program Suppliers' decrease in distant viewing shares in 2012 and 2013 correspond with an increase in Public Television distant viewing in those years.

IV. CONCLUSION: ROYALTY SHARE ALLOCATIONS

40. Based upon the economic theory of consumer behavior, my analysis indicated that relative program viewership provides a reasonable and reliable measure of the relative economic value of distantly retransmitted programing. All else equal, the higher the viewing of distantly retransmitted programming, the higher the value of that programming to consumers and logically to CSOs. Therefore, following this theory, to determine what I believe to be reasonable and reliable relative market values of the 2010-2013 claimant categories, I analyzed data concerning program volume and program viewing patterns of a randomly selected set of stations each year from 2010 to 2013. Table 1 above reports each claimant category's level and share of volume of retransmissions from 2010-2013. Table 2 above reports each claimant category's distant viewing share and therefore its share of the total 2010-2013 Cable Royalties for each royalty year.

APPENDIX A: CURRICULUM VITAE

Jeffrey S. Gray, Ph.D.

President Analytics Research Group LLC 912 F Street NW Washington, DC 20004

Education & Background Summary

Ph.D., Economics, University of Pennsylvania B.A., Economics (with honors) University of California Santa Cruz

Dr. Gray has over 20 years of experience in economic and statistical consulting, survey design, sampling methodologies, and complex database analytics. He is an authority on economic markets, statistical methods, and economic damages. His research has been published in some of the top peer-reviewed journals in the economics profession including *The American Economic Review* and the *Journal of Human Resources*. Dr. Gray has presented his findings before a variety of seminars at universities, meetings of professional societies and conferences on specialized topics in the United States and abroad. Dr. Gray has received recognition and financial support to pursue his research from the U.S. Department of Labor, the U.S. Department of Agriculture, and the Research Board of the University of Illinois. Throughout his career Dr. Gray has served as referee for professional journals assessing the appropriate application of economics and statistics.

Dr. Gray has conducted studies for corporations, government agencies and law firms on a variety of economic and statistical issues. Dr. Gray has served as a testifying expert on behalf of both plaintiffs and defendants addressing class certification, liability and/or damages issues. He has provided written or oral expert testimony in state, federal, and international courts and presented analytical findings before the Securities and Exchange Commission, the Texas Commissioner of Insurance, the Government of Singapore, and the New York and Massachusetts State Offices of Attorney General.

In addition to leading the economic and statistical consulting practices at Huron Consulting Group and Deloitte Financial Advisory Services LLP, Dr. Gray has served on the staff of the President's Council of Economic Advisers and on the faculty of the University of Illinois where he taught graduate and undergraduate courses covering consumer demand analysis, labor economics, and statistics. He earned a Ph.D. in economics from the University of Pennsylvania.

Professional Experience

- Analytics Research Group LLC, Washington, DC
 - o President, Washington DC, 2013 Present
- Deloitte Financial Advisory Services LLP, Washington, DC
 - o Principal and Leader of Economics Practice, Washington DC, 2010 2013
- Huron Consulting Group, Boston, MA
 - Managing Director & National Leader, Economics, 2006 2009
- Deloitte Financial Advisory Services LLP/Deloitte & Touche LLP: FAS, Boston, MA
 - o Principal-In-Charge, Boston, MA, 2004 2006
 - o Economist & Principal, Economic Consulting, 2002 2006
- Arthur Andersen LLP, Boston, MA & Chicago, IL
 - Director, Economic Consulting, 2001 2002
 - o Economist, 1999 2002
- Welch Consulting, College Station, TX
 - Senior Economist, 1996 1999
- University of Illinois, Urbana, IL
 - Assistant Professor, 1993 1997
- President's Council of Economic Advisors, Washington, DC
 - o Staff Economist, 1991 1992
- University of Pennsylvania, Philadelphia, PA
 - o Research, Teaching Assistant and Instructor, 1989 1991

Professional Affiliations

- American Economic Association
- American Finance Association
- American Statistical Association

Referee Responsibilities

 American Economic Review, Demography, Economic Inquiry, International Economic Review, Eastern Economic Journal, Journal of Human Resources, Journal of Labor Economics, Review of Economics and Statistics, Social Science Quarterly, Sociological Forum.

Publications and Presentations (Prior 10 Years)

- Jeffrey S. Gray. *Class Action Litigation: Working with Economics and Statistics Experts*, invited presentation, Washington, DC, September 2013.
- Jeffrey S. Gray. *Patent Infringement Damages: Approaches and Trends*, Moderated Panel on Intellectual Property in the Life Sciences, May 2010.
- Jeffrey S. Gray. Institutional Investors: Protecting Your Assets Prudent Investing, Moderated Panel on Fiduciary Litigation Issues, February 2009.
- Jeffrey S. Gray. Subprime Fallout: Prudent Investing & Economic Damages. Professional Liability Underwriting Society Conference, Boston, MA. October 2008.
- Jeffrey S. Gray with Carl Tannenbaum and Laurence Kotlikoff, Was the Credit Crisis Foreseeable? Moderated Panel, April 2008.
- Eugene Canjels, Jeffrey S. Gray and Michel J. Vanderhart. *Does Everyone Overstate the Number of Hours They Work? An Examination of Survey Response Bias Among Salaried and Hourly Workers*, White Paper, April 2005.

Expert Testimony & Affidavits (Prior 4 Years)

- In the Matter of Distribution of the 2004, 2005, 2006, 2007, 2008 and 2009 Cable Royalty Funds, before the Copyright Royalty Judges, Washington D.C., Doc No. 2012-6 CRB CD 2004-2009 (Phase II), and In the Matter of Distribution of the 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 and 2009 Satellite Royalty Funds, before the Copyright Royalty Judges, Washington D.C., Doc No. 2012-7 CRB CD 1999-2009 (Phase II), expert affidavits and trial testimony (2014-2015).
- In the Matter of Distribution of the 2000, 2001, 2002, and 2003 Cable Royalty Funds, before the Copyright Royalty Judges, Washington D.C., Doc No. 2008-2 CRB CD 2000-2003 (Phase II), expert affidavits and trial testimony (2013).
- Michael Brown, Brian Singer et al v. Canadian Imperial Bank of Commerce, proceeding under the Class Proceedings Act, 1992, Court File No. 08-CV-00365119CP, Ontario Superior Court of Justice, Canada; expert affidavit and oral cross-examination (2011).
- Wayne B. Gould et al v. Western Coal Corporation, et al., proceeding under the Class Proceedings Act, 1992, Court File No. CV-09-391701-00CP, Ontario Superior Court of Justice, Canada; two expert affidavits (2011).

APPENDIX B: STATIONS SAMPLED FOR CABLE ANALYSIS

2010		2011		20	012	2013	
	Distant		Distant		Distant		Distant
Station	Subscribers	Station	Subscribers	Station	Subscribers	Station	Subscribers
WGN-DT	41,361,722	WGN-DT	43,106,794	WGN-DT	42,459,172	WGN-DT	42,522,609
WLIW-DT	743,494	CBUT	966,581	CBUT	868,203	CBUT	893,666
WNET-DT	661,353	WLIW-DT	680,208	WLIW-DT	613,759	WLIW-DT	644,340
WPIX-DT	605,742	WNET-DT	643,737	WPIX-DT	590,292	WPIX-DT	571,383
CBUT-DT	519,880	WPIX-DT	611,976	WBRE-DT	589,716	WNET-DT	516,323
WUAB-DT	502,043	WNBC-DT	443,643	WNET-DT	515,030	CKSH	367,635
CBUT	495,028	WLRN-DT	440,554	WNBC-DT	432,652	KZSW-LP	356,147
WNBC-DT	457,453	CKSH	355,378	WTWO-DT	397,445	WPHL-DT	345,778
WNYJ-DT	443,386	KCET-DT	345,004	CKSH	376,637	WWOR-DT	304,576
KTNC-DT	362,773	WPHL-DT	341,002	WPHL-DT	354,663	WNBC-DT	296,559
WPHL-DT	361,462	WWOR-DT	330,783	KZSW-LP	324,535	WZDC-LP	295,427
KCET-DT	355,090	WRNN-DT	296,865	WWOR-DT	314,518	WSBE-DT	277,067
WWOR-DT	330,262	WSEE-DT	285,877	WTXF-DT	308,018	KCET-DT	265,628
WRNN-DT	309,964	KZSW-LP	279,651	WRNN-DT	293,264	WNJN-DT	264,498
WSEE-DT	302,564	CBMT	271,354	CBMT	274,453	CBMT	260,888
WSBE-DT	242,579	WSBE-DT	251,487	WSBE-DT	274,148	WYIN-DT	243,832
WSBK-DT	240,355	WUFT-DT	237,247	WSEE-DT	274,126	WLIW-DT2	239,948
CKSH-DT	236,355	WSBK-DT	220,690	KCET-DT	272,285	WLIW-DT3	239,948
KZSW-LP	222,205	WGBX-DT	214,346	WGBX-DT	233,897	WLIW-DT4	239,763
KCTS-DT	219,278	CFTO	213,637	WPRU-LP	232,171	WRNN-DT	238,553
WTXF-DT	217,279	KTNC-DT	211,995	WSJX-LP	232,171	WLVT-DT	223,568
WNJT-DT	207,593	WTXF-DT	208,845	WUFT-DT	228,304	WTXF-DT	222,840
WTTW-DT	207,447	KCTS-DT	202,059	WNJN-DT	226,262	WUFT-DT	220,375
CBLT	201,175	WYIN-DT	201,027	CFTO	225,240	WLVT-DT2	215,031
WGBX-DT	196,230	WTTW-DT	197,967	WYIN-DT	220,030	WLVT-DT3	215,031
WGBH-DT	191,634	WXIX-DT	192,049	CBET	212,586	CFTO	210,241
KCAL-DT	188,472	CBLT	191,437	WLIW-DT2	209,720	WGBH-DT	204,149
WJZ-DT	184,684	KQED-DT	189,265	WLIW-DT3	209,720	WSBK-DT	199,676
CBMT-DT	184,474	WGBH-DT	189,072	WLIW-DT4	207,296	KCTS-DT	196,645
KICU-DT	161,348	WNJN-DT	184,922	WSJP-LD	206,904	CBLT	188,028
KERA-DT	154,646	KCAL-DT	181,998	WGBH-DT	205,789	WNJT-DT	187,323
WPRU-LP	137,494	WLVT-DT	178,912	WLVT-DT	203,523	KQED-DT	181,115
WSJX-LP	137,494	WENH-DT	175,878	WSBK-DT	202,406	WENH-DT	181,077
KYW-DT	136,254	WLVT-DT3	174,221	CBLT	201,644	WJZ-DT	173,911
CFTO-DT	126,564	WPTO-DT	160,795	WJZ-DT	196,034	WNYJ-DT	168,803
WSBE	116,830	KERA-DT	153,072	WLVT-DT2	193,931	KCAL-DT	166,764
WFUT-DT2	115,485	WNJT-DT	146,290	WLVT-DT3	193,931	WHYY-DT	166,246
WBAL-DT	113,901	WNJT-DT2	142,397	KCTS-DT	192,067	WGBX-DT	164,515
KTHV-DT	109,220	WHYY-DT	136,737	KQED-DT	183,750	WXIX-DT	159,311
WSB-DT	108,701	WPRU-LP	133,599	WZDC-LP	180,293	CBET	157,644
WZDC-LP	108,300	WSJP-LD	133,599	WXIX-DT	179,438	KERA-DT	154,289
WCVB-DT	107,534	WSJX-LP	133,599	WTTW-DT	177,361	KBTC-DT	152,766
WEIU-DT	107,128	KUHT-DT	126,726	WENH-DT	175,613	WETA-DT	145,010
WOTM-LP	105,778	WPVI-DT	123,447	WHYY-DT	173,644	WTAM-LP	143,157
KAET-DT	105,173	WBNS-DT	117,523	WWME-CA	173,604	WCMU-DT	142,603
WNET-DT2	104,678	KICU-DT	116,588	WNJT-DT	168,757	WTTW-DT	142,600
WNET-DT3	104,678	WDIV-DT	115,424	KERA-DT	155,565	WAUG-LD	139,738
WNEP-DT	102,560	WPSG-DT	114,434	KBTC-DT	153,098	WSEE-DT	136,966
KNBC-DT	100,612	WTAM-LP	114,296	WROC-DT	152,860	KUHT-DT	111,236
WHA-DT	100,517	WUNC-DT	111,526	WCAU-DT	151,701	WBAL-DT	109,024
WPTO-DT	99,448	WNYJ-DT	106,681	WCMU-DT	147,625	WUNC-DT	108,110
WBZ-DT	95,788	WEIU-DT	105,993	WETA-DT	138,421	KOCE-DT	101,855

WTBY-DT 95,510 WBAL-DT 105,602 WTAM-LP 129,329 CKWS WTAM-LP 94,619 KATV-DT 105,440 WSB-DT 111,897 WSB-DT KOPB-DT 89,812 KDKA-DT 103,604 WDIV-DT 111,546 KAET-DT WBPX-DT 88,819 WOTM-LP 99,007 WUNC-DT 108,913 WTBY-D' CHLT 83,385 WLIW-DT4 97,797 KATV-DT 99,117 WNYW-D KABC-DT 83,371 WUAB-DT 96,059 WTBY-DT 93,808 WCAU-D' WNDU-DT 83,187 KTCA-DT 95,888 KAET-DT 93,681 CBFT KRMA-DT 82,703 WTBY-DT 95,474 KNBC-DT 92,777 WMBC-D WSYX-DT 79,721 WMBC-DT 92,504 WNYW-DT 91,556 WSYX-D' WDW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-D' WNIN 77,965 WSFL-DT 86,820 KDKA-DT <t< th=""><th>Γ 90,729 T 90,161 Γ 88,498 85,637 84,662 Γ 82,968 Γ 82,650 Γ4 80,033 Γ 74,622 Γ 74,250 Γ 73,295</th></t<>	Γ 90,729 T 90,161 Γ 88,498 85,637 84,662 Γ 82,968 Γ 82,650 Γ4 80,033 Γ 74,622 Γ 74,250 Γ 73,295
KOPB-DT 89,812 KDKA-DT 103,604 WDIV-DT 111,546 KAET-DT WBPX-DT 88,819 WOTM-LP 99,007 WUNC-DT 108,913 WTBY-DT CHLT 83,385 WLIW-DT4 97,797 KATV-DT 99,117 WNYW-DT KABC-DT 83,371 WUAB-DT 96,059 WTBY-DT 93,808 WCAU-DY WNDU-DT 83,187 KTCA-DT 95,888 KAET-DT 93,681 CBFT KRMA-DT 82,703 WTBY-DT 95,888 KAET-DT 93,681 CBFT KRMA-DT 82,703 WTBY-DT 95,474 KNBC-DT 92,777 WMBC-D WSYX-DT 79,721 WMBC-DT 92,504 WNYW-DT 91,556 WSYX-DT WPCW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-DT WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-D WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT <td< td=""><td>91,579 F 90,729 T 90,161 F 88,498 85,637 F 84,662 F 82,968 F 82,650 F4 80,033 F 74,622 F 74,250 F 73,295</td></td<>	91,579 F 90,729 T 90,161 F 88,498 85,637 F 84,662 F 82,968 F 82,650 F4 80,033 F 74,622 F 74,250 F 73,295
WBPX-DT 88,819 WOTM-LP 99,007 WUNC-DT 108,913 WTBY-DT CHLT 83,385 WLIW-DT4 97,797 KATV-DT 99,117 WNYW-DT KABC-DT 83,371 WUAB-DT 96,059 WTBY-DT 93,808 WCAU-DY WNDU-DT 83,187 KTCA-DT 95,888 KAET-DT 93,681 CBFT KRMA-DT 82,703 WTBY-DT 95,474 KNBC-DT 92,777 WMBC-D WSYX-DT 79,721 WMBC-DT 92,504 WNYW-DT 91,556 WSYX-DT WPCW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-DT WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-DT WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 76,016 KOPB-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,102 WCVB-DT <	Γ 90,729 T 90,161 Γ 88,498 85,637 84,662 Γ 82,968 Γ 82,650 Γ4 80,033 Γ 74,622 Γ 74,250 Γ 73,295
CHLT 83,385 WLIW-DT4 97,797 KATV-DT 99,117 WNYW-D KABC-DT 83,371 WUAB-DT 96,059 WTBY-DT 93,808 WCAU-D' WNDU-DT 83,187 KTCA-DT 95,888 KAET-DT 93,681 CBFT KRMA-DT 82,703 WTBY-DT 95,474 KNBC-DT 92,777 WMBC-D WSYX-DT 79,721 WMBC-DT 92,504 WNYW-DT 91,556 WSYX-D' WPCW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-D' WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-D' WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D' WMCN-DT 74,555 WWSI-DT 80,217 KRON-DT 83	T 90,161 Γ 88,498 85,637 Γ 84,662 Γ 82,968 Γ 82,650 Γ4 80,033 74,622 74,622 Γ 74,250 Γ 73,295
KABC-DT 83,371 WUAB-DT 96,059 WTBY-DT 93,808 WCAU-D' WNDU-DT 83,187 KTCA-DT 95,888 KAET-DT 93,681 CBFT KRMA-DT 82,703 WTBY-DT 95,474 KNBC-DT 92,777 WMBC-D WSYX-DT 79,721 WMBC-DT 92,504 WNYW-DT 91,556 WSYX-D' WPCW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-D' WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-D' WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D' WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D' WWSI-DT 73,288 WPCW-DT 79,227 WBZ-DT	Γ 88,498 85,637 84,662 Γ 82,968 Γ 82,650 Γ4 80,033 Γ 74,622 Γ 74,250 Γ 73,295
WNDU-DT 83,187 KTCA-DT 95,888 KAET-DT 93,681 CBFT KRMA-DT 82,703 WTBY-DT 95,474 KNBC-DT 92,777 WMBC-D WSYX-DT 79,721 WMBC-DT 92,504 WNYW-DT 91,556 WSYX-D' WPCW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-D' WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-D' WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D' WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D' WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D' CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT	85,637 T 84,662 T 82,968 T 82,650 T4 80,033 T 74,622 T 74,250 T 73,295
KRMA-DT 82,703 WTBY-DT 95,474 KNBC-DT 92,777 WMBC-D WSYX-DT 79,721 WMBC-DT 92,504 WNYW-DT 91,556 WSYX-D WPCW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-D WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-D WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,1	T 84,662 Γ 82,968 Γ 82,650 Γ4 80,033 Γ 74,622 Γ 74,250 Γ 73,295
WSYX-DT 79,721 WMBC-DT 92,504 WNYW-DT 91,556 WSYX-DT WPCW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-DT WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-DT WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-DT WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-DT WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-DT CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-DT	Γ 82,968 Γ 82,650 Γ4 80,033 Γ4,622 74,622 Γ 74,250 Γ 73,295
WPCW-DT 79,329 WRMD-CD 92,367 WYIN-DT3 91,474 WQED-D WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-D WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D	Γ 82,650 Γ4 80,033 74,622 74,622 Γ 74,250 Γ 73,295
WNJN 77,965 WSFL-DT 86,820 KDKA-DT 90,166 WFME-D' WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D' WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D' WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D' CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D'	Γ4 80,033 74,622 74,622 Γ 74,250 Γ 73,295
WRMD-CD 77,909 WCVB-DT 83,785 WMBC-DT 89,837 KABC-DT WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D' WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D' WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D' CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D'	74,622 74,622 F 74,250 F 73,295
WFLD-DT 77,301 WSIU-DT 81,666 WRIC-DT 85,027 KCOP-DT KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D' WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D' WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D' CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D'	74,622 1 74,250 1 73,295
KTCA-DT 76,016 KOPB-DT 81,269 CBFT 84,355 KCWC-D' WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D' WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D' CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D'	74,25073,295
WMCN-DT 74,555 WWSI-DT 81,102 WCVB-DT 83,723 WNVT-D' WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D' CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D'	Г 73,295
WWSI-DT 74,202 WFPA-CA 80,217 KRON-DT 83,661 KRWG-D' CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D'	
CKWS-DT 73,288 WPCW-DT 79,227 WBZ-DT 80,457 WPCW-D WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D	Γ 72,293
WCMU-DT 72,967 WNPB-DT 78,400 WHDH-DT 80,167 KRMA-D	
KUSM-DT 72,521 WNED-DT 77,945 WSYX-DT 78,651 XHAB	Γ 70,072
	63,362
KLRN-DT 72,005 KCRA-DT 77,363 KCOP-DT 78,416 XHOR	63,362
KOFY-DT 71,940 KABC-DT 76,932 WHA-DT 76,686 WSBT-DT	62,507
KRON-DT 71,940 KCOP-DT 76,932 WIS-DT 75,601 WPSU-DT	60,934
WSFL-DT 69,587 KOFY-DT 75,859 KYW-DT 75,176 WHA-DT	59,103
WMUR-DT 65,106 KLRN-DT 71,699 WMUR-DT 71,757 WYES-DT	
WVIZ-DT 64,252 WKYT-DT 70,031 WJAN-LP 68,586 WZME-D	Γ 53,235
WDIV-DT 63,936 WMUR-DT 67,302 WEFS-DT 67,981 WBEC-DT	52,267
KEYT-DT 61,536 WSBT-DT 63,781 KDIN-DT 66,614 WKYT-D'	Γ 51,204
WAUG-LP 59,850 WWBT-DT 62,417 XHAB 62,720 WFYI-DT	48,994
WBIQ-DT 58,897 WNDU-DT 62,323 WNDU-DT 59,830 WHVL-LI	
WUSA-DT 56,517 KRMA-DT 60,811 KCWC-DT 59,346 KTNC-DT	
WPXI-DT 51,921 WVXF-DT 60,765 WVXF-DT 57,633 WUSF-DT	
WBGT-CD 46,786 WVIZ-DT3 60,635 WDBJ-DT 57,466 WBRA-D	
KYMB-LD 46,235 XHAB 60,550 WSAH-DT 55,220 WVXF-D	Γ 46,684
WFXT-DT 44,154 KLCS-DT 59,651 WNED-DT 54,402 WPXI-DT	46,261
KWTV-DT 44,062 WSAH-DT 57,940 WMAQ-DT 52,693 WTAJ-DT	45,846
WWMT-DT 42,702 WVIZ-DT 57,376 WKMJ-DT 52,391 KYW-DT	45,678
WLNY-DT 42,530 WJAN-LP 57,334 KLCS-DT 52,350 WBIN-DT	45,214
WBOC-DT 42,186 WUSA-DT 55,557 KTHV-DT 51,238 KETA-DT	42,635
WOSU-DT 37,576 WFME-DT4 54,583 WUSA-DT 49,938 KWGN-D	Γ 42,050
KCSO-LD 36,014 KFOR-DT 48,553 KICU-DT 49,937 WAIQ-DT	41,486
KTWO-DT 32,547 KVIE-DT 47,717 KRMA-DT 49,551 WATC-D	Т 38,317
WIAT-DT 31,580 WBGT-CD 47,270 KARK-DT 49,167 WDRB-D	Γ 32,820
WSEC-DT 31,519 WPGH-DT 47,126 KEYT-DT 48,245 WAFF-DT	30,951
WSAH-DT 29,949 WYES-DT 46,817 WCMV-DT 46,287 WPGH-DT	Σ 28,149
WXIA-DT 29,420 WPBY-DT 43,916 WXSP-LP 45,181 WIAT-DT	27,365
WPBS-DT 26,596 WYTV-DT 42,051 KUSA-DT 43,677 WNEP-DT	26,949
WWPX-DT 26,583 WWL-DT 41,440 WFYI-DT 41,151 WCAX-D	Γ 26,523
KPLC-DT 25,955 WHUT-DT 40,870 WBIQ-DT 39,847 WEBA-D	Γ 26,078
CBWT-DT 25,917 WTMJ-DT 40,003 WPBS-DT 38,790 WITN-DT	25,148
WLAE-DT 25,868 WALA-DT 38,667 WNPT-DT 38,705 KOAT-DT	24,791
WCAX-DT 25,691 WHUT-DT2 30,630 KTRK-DT 35,440 WNYF-LF	23,454
KSMQ-DT 25,036 XEW 29,593 WBIN-DT 34,565 KTMJ-CD	21,232
WCHS-DT 24,164 WCAX-DT 26,076 WGTV-DT 34,153 KETV-DT	20,412
WJEB-DT 24,137 WMHT-DT 25,802 WMHT-DT 33,718 KTEJ-DT	19,122
WKMG-DT 24,062 WLIO-DT 25,595 WNEP-DT 33,057 WTVQ-D	Γ 18,988
WNEO-DT 23,808 WEWS-DT 25,369 WTMJ-DT 32,404 WIPB-DT	18,676
WOLF-DT 23,475 KMGH-DT 24,260 WVLA-DT 30,634 WRTV-D	Г 17,999
WBNG-DT 21,554 WUHF-DT 24,193 WDCQ-DT 28,380 KOCE-DT	2 17,711
WTVR-DT 20,945 WLS-DT 24,187 KHNE-DT 23,762 WUNP-D	Γ 17,477

WICZ-DT	19,953	WSAV-DT	22,848	WLS-DT	22,931	WAFB-DT	16,776
WCCO-DT	19,866	WBQD-LP	19,418	KBSV-DT	22,799	KTSC-DT2	15,885
WNEM-DT	19,718	WPSD-DT	18,335	CBUT-DT	22,672	WTVR-DT	15,186
WTGL-DT	17,013	KCRG-DT	16,382	WSFA-DT	21,225	KIIN-DT	14,416
WPBA-DT	16,876	WHEC-DT	13,685	KSTP-DT	18,696	WOKZ-CA	11,512
KNXT-DT	16,844	WHAM-DT2	11,977	WMYO-DT	14,860	KPTV-DT	11,470
WHBQ-DT	15,595	WMPT-DT3	11,544	WRAL-DT	13,905	KSAW-LD	9,182
WKBD-DT	13,767	WTTV-DT	10,762	WMPT-DT3	12,823	WYCC-DT2	9,022
WOUB-DT	10,748	WVIT-DT	10,471	WGVU-DT	12,459	WBIR-DT	8,851
WCJB-DT	10,660	WHAM-DT	10,443	KBFX-CA	12,381	WPXA-DT	8,744
WJET-DT	9,932	KBFX-CA	10,162	WLBZ-DT2	12,122	KGWC-DT	8,731
KUON-DT	9.932	KTFT-LP	9,426	WEBE DIE	11,880	WYBE-DT	8,542
KHBS-DT	9,811	KEVN-DT	9,422	WNSC-DT	11,591	WKOP-DT	8,455
KTFT-LP	9,658	CIMT	8,253	KSPR-DT	10,561	WGNT-DT	8,393
WEEK-DT	8.744	WTOM-DT	8,055	WGME-	8,370	WAFF-DT2	8,195
KVIA-DT	8,582	KHOU-DT	8,026	WDFM-LP	8,310	WMBD-DT	8,188
KACV-DT2	8,003	KACV-DT2	7,881	WKOP-DT	8,153	WLPB-DT	6,578
WBGU-DT3	7,844	KMOV-DT	7,792	WVIR-DT	6,958	WEVX-LD	6,489
WSTM-DT3	7,765	KMCI-DT	6,955	WLEF-DT	6,921	KBHE-DT	5,573
WFRZ-LP	7,763	KNPB-DT	6,834	KTEN-DT	6,576	KCCI-DT	4,852
WLLZ-LP	6.859	KTEN-DT	6,827	KJBO-LP	6,070	WJET-DT	4,603
KSTC-DT	5,864	KNLJ-DT	6,736	WHTX-LP	5,939	WKYC-DT	3,478
KHON-DT	5,813	WCTX-DT	6,030	KETV-DT2	4,914	WBGH-CA	3,347
KSNF-DT	5,030	WUWT-LP	4,762	WMHT-	3,660	WAXN-DT	2,132
KATU-DT	4.958	KOEG-CA	3,981	WKYC-DT	3,627	WFMZ-DT	1,620
KCCW-DT	3,761	KOZL-DT	3,770	KCCW-DT	3,027	WREG-DT	1,469
WNMN-DT	3,433	WHTV-DT	2,586	WILL-DT2	2,457	WTLW-DT2	1,469
WTO5	2,572	WPXN-DT	2,519	WTTE-DT	2,319	WLYH-DT	1,284
WMAZ-DT	2,359	WUPA-DT	2,185	WTVE-DT	2,183	KYTX-DT3	1,230
WNIN-DT	2,043	WITV-DT	2,112	WTWV-DT	2,176	WHMB-DT	1,191
WCIU	1,068	WGCB-DT	1,709	KMOS-DT	1,918	WHMB-D1 WJYS-DT2	1,191
WBMM-DT	895	WPBM-LP	1,554	WNIN-DT	1,301	KWCM	1,070
WWJ-DT	782	KLTJ-DT	1,391	WXPX-DT	1,207	WHWC-DT3	1,070
WTHR-DT	700	WUNL-DT	1,190	KLFY-DT	871	WENY-DT3	736
WPXV-DT	567	KWSD	1,190	KPBN-LP	714	KSWO-DT2	530
WTCE-DT	558	WWJ-DT	1,156	KPBN-LP KSIN-DT2	675	KUNW-LP	454
KRPV-DT	465	KOCE-DT2	1,107		522		341
WFXS-DT	465	WHTN-DT	975	WMAZ-DT	522 417	WGBO-DT	307
KBYU	317	KJTV	418	WTNZ-DT KRBC-DT	226	WBFF-DT3 KTPX-DT	29
		KJI V KAZT-DT					4
WMYD	142		290	KAMR-DT	186	WQAD-DT3	4
WPXD	142 99	KOMU-HD	70	WHBF-DT	176		
WDKA-DT	99	WMDT-DT	27				

APPENDIX C: CABLE REGRESSION MODELS - SPECIFICATIONS & RESULTS

1		Dahmat			
	Coefficient	Robust Standard			
Distant Viewers	Estimate	Error	Z-score	95% Confidence	Interval
Log of Local Ratings	1050.15	13.35	78.66	1023.99	1076.32
Log of Market Size	0.4848	0.0004	1252.68	0.4840	0.4856
Edg of Market Size	0.1010	0.0001	1232.00	0.1010	0.1030
Time of Day (Quarter Hour)					
2	-0.1873	0.0081	-23.12	-0.2032	-0.1714
3	-0.2555	0.0081	-31.54	-0.2714	-0.2396
4	-0.3575	0.0083	-42.96	-0.3738	-0.3412
5	-0.3406	0.0083	-40.99	-0.3569	-0.3243
6	-0.4848	0.0086	-56.22	-0.5017	-0.4679
7	-0.5726	0.0087	-65.61	-0.5897	-0.5555
8	-0.6902	0.0090	-76.85	-0.7078	-0.6726
9	-0.6343	0.0090	-70.71	-0.6519	-0.6167
10	-0.7771	0.0094	-82.60	-0.7955	-0.7586
11	-0.8570	0.0097	-88.45	-0.8760	-0.8380
12	-0.9624	0.0101	-95.26	-0.9822	-0.9426
13	-0.9547	0.0101	-93.86	-0.9746	-0.9347
14	-1.0497	0.0105	-99.56	-1.0704	-1.0290
15	-1.1413	0.0108	-105.93	-1.1625	-1.1202
16	-1.1474	0.0109	-105.34	-1.1687	-1.1260
17	-1.0971	0.0108	-102.05	-1.1181	-1.0760
18	-1.0846	0.0107	-101.70	-1.1055	-1.0700
19	-1.0524	0.0105	-100.25	-1.0730	-1.0318
20	-1.0802	0.0106	-102.10	-1.1010	-1.0595
20	-0.9411	0.0098	-96.21	-0.9603	-0.9219
22	-0.8831	0.0097	-90.72	-0.9022	-0.9219
22	-0.8352	0.0095	-87.63	-0.8538	-0.8165
23	-0.8392	0.0094	-87.94	-0.8475	-0.8105
25	-0.7048	0.0092	-76.27	-0.7229	-0.6867
26	-0.4898	0.0092	-56.08	-0.5069	-0.0807
26	-0.3414	0.0082	-41.56	-0.3575	-0.4727
28	-0.3414	0.0079	-23.02	-0.1981	-0.3233
28	-0.1820	0.0073	-27.98	-0.1381	-0.1070
30	-0.2373	0.0092	-10.91	-0.2734	-0.2393
31	-0.0054	0.0085	-0.64	-0.0221	0.0112
32	0.0955	0.0082	11.68	0.0795	0.0112
	0.1525	0.0082	19.37	0.1371	0.1110
33	0.1323	0.0079	29.64	0.1371	0.1679
34 35	0.2064	0.0077	26.51	0.1911	0.2440
36	0.2894 0.1546	0.0076	38.09 20.72	0.2745	0.3043
37	0.1346	0.0075 0.0076	13.94	0.1400 0.0908	0.1693 0.1205
38	0.1055	0.0076	13.94	0.0908	0.1205
39			17.34		
40	0.1308	0.0075		0.1160	0.1456
41	0.0861	0.0076	11.33	0.0712	0.1010
42	0.0037	0.0077 0.0077	0.48	-0.0114	0.0188
43	0.0347		4.52	0.0196	0.0498
44	0.0700	0.0076	9.18	0.0551	0.0850
45	0.0588	0.0079	7.49	0.0434	0.0742
46	-0.0007	0.0080	-0.09	-0.0165	0.0150

47	-0.0106	0.0081	-1.32	-0.0264	0.0052
48	0.1165	0.0078	14.96	0.1012	0.1318
49	0.1911	0.0074	25.87	0.1766	0.2056
50	0.1984	0.0075	26.41	0.1837	0.2132
51	-0.0221	0.0078	-2.82	-0.0374	-0.0067
52	-0.0616	0.0079	-7.81	-0.0771	-0.0462
53	0.0939	0.0077	12.20	0.0788	0.1089
54	0.0847	0.0077	10.97	0.0696	0.0999
55	0.0700	0.0077	9.06	0.0549	0.0852
56	0.1095	0.0076	14.34	0.0945	0.1244
57	0.1519	0.0076	20.11	0.1371	0.1667
58	0.1285	0.0076	16.93	0.1137	0.1434
59	0.1408	0.0076	18.45	0.1259	0.1558
60	0.1438	0.0076	18.96	0.1289	0.1587
61	0.1829	0.0074	24.66	0.1684	0.1975
62	0.1627	0.0074	21.96	0.1482	0.1772
63	0.1824	0.0074	24.56	0.1678	0.1969
64	0.2073	0.0074	28.06	0.1928	0.2218
65	0.3954	0.0070	56.16	0.3816	0.4092
66	0.3575	0.0071	50.44	0.3436	0.3714
67	0.3833	0.0070	54.67	0.3696	0.3971
68	0.4429	0.0069	64.01	0.4294	0.4565
69	0.5249	0.0067	77.78	0.5117	0.5381
70	0.5348	0.0067	79.33	0.5216	0.5480
71	0.4951	0.0069	72.07	0.4817	0.5086
72	0.5570	0.0068	81.75	0.5436	0.5703
73	0.6996	0.0067	104.26	0.6864	0.7127
74	0.6858	0.0068	101.20	0.6725	0.6990
75	0.7515	0.0066	113.71	0.7386	0.7645
76	0.8646	0.0065	133.20	0.8519	0.8773
77	0.9164	0.0065	141.75	0.9037	0.9290 0.9573
78	0.9446	0.0065 0.0064	145.60 141.42	0.9319 0.8905	0.9573
79	0.9030 1.0651	0.0064	141.42	1.0526	1.0775
80	1.2130	0.0064	190.44	1.0526	1.0775
81 82	1.2130	0.0064	171.83	1.2005	1.1204
83	1.1264	0.0065	174.50	1.1138	1.1391
84	1.1310	0.0065	174.86	1.1184	1.1437
85	1.0433	0.0067	155.98	1.0302	1.0564
86	0.8987	0.0067	132.29	0.8854	0.9120
87	0.8808	0.0068	128.64	0.8674	0.8943
88	0.8245	0.0069	119.90	0.8110	0.8380
89	0.9788	0.0065	150.97	0.9661	0.9915
90	0.7855	0.0066	118.19	0.7725	0.7985
91	0.6556	0.0068	96.38	0.6422	0.6689
92	0.5901	0.0069	85.81	0.5766	0.6036
93	0.6259	0.0066	94.96	0.6130	0.6389
94	0.4277	0.0068	62.95	0.4144	0.4410
95	0.2558	0.0072	35.75	0.2418	0.2699
96	0.0929	0.0075	12.36	0.0781	0.1076
30	0.0323	2.00.0		5.07.01	5.2570
Program Type					
2	-0.7754	0.0042	-183.32	-0.7837	-0.7671
3	-0.9129	0.0047	-192.87	-0.9222	-0.9036
4	-0.4101	0.0197	-20.86	-0.4487	-0.3716
5	-1.9916	0.2374	-8.39	-2.4568	-1.5264
6	0.4353	0.0048	90.23	0.4258	0.4447
7	-1.5119	0.0083	-181.45	-1.5283	-1.4956
8	-0.7757	0.0139	-55.74	-0.8030	-0.7484
ŭ .		0.0103	33., 1	2.2330	S.,

9	-0.5317	0.0050	-105.77	-0.5416	-0.5219
10	-2.2343	0.0161	-138.71	-2.2659	-2.2027
11	-0.9464	0.0161	-58.94	-0.9779	-0.9150
12	-0.5380	0.0054	-99.56	-0.5486	-0.5274
13	-0.4908	0.0066	-74.75	-0.5036	-0.4779
14	-0.5351	0.0048	-110.83	-0.5446	-0.5256
15	-0.5424	0.0053	-101.82	-0.5529	-0.5320
16	-0.6221	0.0050	-124.22	-0.6319	-0.6123
17	-0.4245	0.0041	-104.74	-0.4325	-0.4166
18	-0.6880	0.0041	-168.22	-0.6961	-0.6800
19	-1.5147	0.0045	-338.67	-1.5234	-1.5059
20	0.1313	0.0051	25.95	0.1214	0.1412
21	0.4614	0.0067	68.85	0.4483	0.4746
22	0.1380	0.0081	17.07	0.1221	0.1538
23	-1.0783	0.0065	-167.01	-1.0910	-1.0657
24	-2.9598	0.0096	-309.50	-2.9785	-2.9410
25	-0.8181	0.0046	-178.66	-0.8270	-0.8091
26	0.0401	0.0071	5.67	0.0262	0.0539
27	-1.5299	0.0361	-42.41	-1.6006	-1.4592
28	-0.7426	0.0083	-89.74	-0.7588	-0.7264
29	-0.6162	0.0039	-158.15	-0.6238	-0.6085
30	-0.2113	0.0095	-22.32	-0.2299	-0.1928
31	-0.8061	0.0042	-193.74	-0.8143	-0.7980
32	-0.4492	0.0070	-64.07	-0.4629	-0.4354
Constant	-7.2951	0.0081	-904.29	-7.3109	-7.2793

Distant Viewers	Coefficient Estimate	Robust Standard Error	Z-score	95% Confidence	Interval
	6702.91	77.91	86.04	6550.21	6855.60
Log of Local Ratings	+				
Log of Market Size	0.4918	0.0004	1179.47	0.4910	0.4927
Time of Day (Quarter Hour)					
2	-0.1692	0.0086	-19.65	-0.1861	-0.1523
3	-0.1936	0.0086	-22.39	-0.2106	-0.1767
4	-0.2795	0.0089	-31.47	-0.2969	-0.2621
5	-0.3250	0.0089	-36.47	-0.3425	-0.3076
6	-0.4480	0.0091	-49.23	-0.4658	-0.4301
7	-0.4863	0.0092	-52.92	-0.5043	-0.4683
8	-0.6106	0.0095	-64.09	-0.6293	-0.5919
9	-0.6905	0.0099	-69.61	-0.7099	-0.6711
10	-0.8001	0.0103	-78.01	-0.8202	-0.7800
11	-0.8345	0.0105	-79.79	-0.8550	-0.8140
12	-0.9126	0.0107	-85.11	-0.9336	-0.8916
13	-0.9737	0.0109	-89.00	-0.9951	-0.9522
14	-1.0608	0.0113	-93.97	-1.0829	-1.0387
15	-1.1333	0.0116	-97.42	-1.1561	-1.1105
16	-1.2101	0.0118	-102.29	-1.2333	-1.1869
17	-1.2103	0.0119	-101.70	-1.2336	-1.1869
18	-1.1488	0.0117	-98.19	-1.1717	-1.1258
19	-1.0914	0.0112	-97.45	-1.1133	-1.0694
20	-1.2242	0.0117	-104.61	-1.2471	-1.2013
21	-1.0921	0.0113	-96.77	-1.1142	-1.0699
22	-0.9889	0.0110	-90.29	-1.0104	-0.9674
23	-0.9945	0.0111	-89.85	-1.0162	-0.9728
24	-0.9036	0.0108	-83.79	-0.9248	-0.8825
25	-0.5886	0.0099	-59.56	-0.6079	-0.5692
26	-0.3968	0.0093	-42.68	-0.4150	-0.3785
27	-0.2483	0.0089	-27.89	-0.2657	-0.2308
28	-0.0198	0.0084	-2.35	-0.0364	-0.0033
29	0.1351	0.0091	14.90	0.1173	0.1529
30	0.2222	0.0092	24.03	0.2040	0.2403
31	0.1604	0.0089	17.95	0.1429	0.1779
32	0.2448	0.0085	28.68	0.2281	0.2615
33	0.1501 0.2494	0.0084 0.0082	17.91 30.25	0.1336 0.2333	0.1665 0.2656
34 35	0.2500	0.0082	30.59	0.2340	0.2660
36	0.2300	0.0082	34.50	0.2657	0.2000
37	0.2586	0.0079	32.85	0.2432	0.2740
38	0.2244	0.0079	28.46	0.2089	0.2398
39	0.2039	0.0079	25.74	0.1883	0.2194
40	0.2100	0.0079	26.57	0.1946	0.2255
41	0.2701	0.0079	34.29	0.2547	0.2855
42	0.2276	0.0080	28.55	0.2120	0.2433
43	0.1784	0.0080	22.26	0.1627	0.1941
44	0.1957	0.0079	24.63	0.1801	0.2113
45	0.1750	0.0081	21.73	0.1592	0.1908
46	0.1730	0.0081	16.96	0.1220	0.1538
47	0.1601	0.0081	19.74	0.1442	0.1760
48	0.1738	0.0081	21.52	0.1580	0.1896
49	0.2959	0.0076	38.92	0.2810	0.3108

50	0.2593	0.0077	33.81	0.2442	0.2743
51	0.1655	0.0079	20.89	0.1499	0.1810
52	0.2112	0.0080	26.46	0.1955	0.2268
53	0.3627	0.0077	47.08	0.3476	0.3778
54	0.3403	0.0078	43.69	0.3250	0.3556
55	0.3531	0.0078	44.99	0.3378	0.3685
56	0.3846	0.0078	49.12	0.3693	0.3999
57	0.3483	0.0078	44.70	0.3330	0.3635
58	0.3029	0.0079	38.53	0.2875	0.3183
59	0.3270	0.0079	41.50	0.3116	0.3425
60	0.3492	0.0078	44.92	0.3340	0.3645
61	0.4319	0.0076	56.79	0.4170	0.4468
62	0.3469	0.0078	44.57	0.3317	0.3622
63	0.3458	0.0078	44.38	0.3305	0.3611
64	0.4074	0.0077	52.94	0.3923	0.4224
65	0.4601	0.0076	60.77	0.4453	0.4750
66	0.3929	0.0076	51.38	0.3779	0.4078
67	0.4255	0.0076	55.73	0.4105	0.4405
68	0.4335	0.0076	57.33	0.4187	0.4483
69	0.5688	0.0074	76.46	0.5543	0.5834
70	0.5495	0.0074	73.84	0.5349	0.5640
71	0.5682	0.0076	75.24	0.5534	0.5830
72	0.6499	0.0074	87.61	0.6353	0.6644
73	0.7664	0.0072	106.19	0.7523	0.7805
74	0.7930	0.0072	110.63	0.7789	0.8070
75	0.6931	0.0075	92.64	0.6784	0.7078
76	0.8136	0.0084	96.98	0.7972	0.8300
77	0.9612	0.0077	125.16	0.9461	0.9762
78	1.0251	0.0070	145.94	1.0114	1.0389
79	0.9931	0.0070	142.47	0.9794	1.0067
80	1.1217	0.0071	159.06	1.1079	1.1356
81	1.2969	0.0069	187.74	1.2834	1.3105
82	1.1453	0.0070	163.34	1.1316	1.1591
83	1.1646	0.0070	165.63	1.1508	1.1783
84	1.1637 1.0678	0.0070 0.0072	165.96 148.37	1.1500 1.0537	1.1775 1.0819
85	0.9044	0.0072	123.11	0.8900	0.9188
86 87	0.8533	0.0073	115.86	0.8389	0.8677
	-	0.0074		0.8116	
88 89	0.8261 1.0494	0.0074	111.29 144.87	1.0352	0.8407 1.0636
90	0.9005	0.0072	122.67	0.8861	0.9149
90	0.8250	0.0073	113.28	0.8107	0.8393
92	0.6944	0.0073	93.51	0.6798	0.7090
93	0.6605	0.0074	93.31	0.6464	0.6746
94	0.5059	0.0072	69.20	0.4916	0.5202
95	0.1985	0.0073	25.09	0.1830	0.2140
96	0.0075	0.0073	0.90	-0.0089	0.0238
96	0.0073	0.0003	0.50	0.0009	0.0238
Program Type					
2	-0.5914	0.0042	-141.63	-0.5996	-0.5833
3	-0.7826	0.0042	-166.66	-0.7918	-0.7734
4	-0.5079	0.0247	-20.53	-0.5564	-0.4594
6	-0.0804	0.0057	-14.03	-0.0916	-0.0691
7	-0.8678	0.0074	-117.30	-0.8823	-0.8533
8	-0.6568	0.0502	-117.30	-0.7553	-0.5584
9	-0.4216	0.0053	-79.00	-0.4321	-0.4112
10	-1.0608	0.0132	-80.44	-1.0866	-1.0349
11	-0.2775	0.0132	-20.46	-0.3041	-0.2509
12	-0.4136	0.0053	-77.47	-0.4241	-0.4032
12	-0.4130	0.0033	,,.4/	0.4241	0.4032

13	-0.1738	0.0072	-24.20	-0.1879	-0.1597
14	-0.2342	0.0048	-48.59	-0.2437	-0.2248
15	-0.4162	0.0052	-79.74	-0.4264	-0.4059
16	-0.6169	0.0051	-122.12	-0.6268	-0.6070
17	-0.3808	0.0040	-94.71	-0.3887	-0.3729
18	-0.7901	0.0042	-186.76	-0.7984	-0.7818
19	-1.1051	0.0044	-249.53	-1.1138	-1.0965
20	0.4576	0.0051	89.84	0.4476	0.4676
21	0.9870	0.0084	118.00	0.9706	1.0034
22	-24.3465	0.0212	-1148.09	-24.3881	-24.3049
23	-0.4159	0.0060	-69.29	-0.4277	-0.4041
24	-1.9789	0.0090	-220.33	-1.9965	-1.9613
25	-0.4793	0.0044	-108.55	-0.4880	-0.4707
26	0.3033	0.0081	37.50	0.2874	0.3191
27	-1.7441	0.0542	-32.19	-1.8503	-1.6379
28	-0.4326	0.0090	-47.84	-0.4503	-0.4148
29	-0.5178	0.0039	-133.97	-0.5253	-0.5102
30	0.0068	0.0140	0.49	-0.0206	0.0342
31	-0.5459	0.0041	-132.41	-0.5540	-0.5378
32	-0.4052	0.0077	-52.34	-0.4203	-0.3900
Constant	-7.8395	0.0086	-912.35	-7.8563	-7.8227

Distant Viewers	Coefficient Estimate 25365.42	Robust Standard Error 58.8317	Z-score	95% Confidence Interval	
Log of Local Ratings			431.15	25250.11	25480.73
Log of Market Size	0.4303	0.0004	1102.68	0.4295	0.4311
Time of Day (Quarter Hour)					
2	-0.1444	0.0078	-18.50	-0.1597	-0.1291
3	-0.2588	0.0080	-32.55	-0.2744	-0.2432
4	-0.4446	0.0083	-53.79	-0.4608	-0.4284
5	-0.4097	0.0084	-49.00	-0.4261	-0.3933
6	-0.5570	0.0086	-64.65	-0.5739	-0.5401
7	-0.6191	0.0087	-71.22	-0.6361	-0.6021
8	-0.6782	0.0087	-77.94	-0.6952	-0.6611
9	-0.8049	0.0090	-89.51	-0.8226	-0.7873
10	-0.9339	0.0095	-97.92	-0.9526	-0.9152
11	-0.9609	0.0097	-99.32	-0.9799	-0.9420
12	-1.0184	0.0099	-102.50	-1.0379	-0.9990
13	-0.9987	0.0099	-101.29	-1.0180	-0.9793
14	-1.0311	0.0101	-101.84	-1.0509	-1.0112
15	-1.1544	0.0104	-111.24	-1.1747	-1.1340
16	-1.2319	0.0107	-115.16	-1.2529	-1.211
17	-1.1256	0.0103	-109.01	-1.1459	-1.105
18	-1.1935	0.0106	-112.25	-1.2144	-1.172
19	-1.1899	0.0102	-116.53	-1.2100	-1.169
20	-1.2052	0.0104	-115.88	-1.2256	-1.184
21	-1.0324	0.0100	-103.18	-1.0520	-1.012
22	-1.0633	0.0100	-106.36	-1.0829	-1.043
23	-1.0856	0.0101	-107.63	-1.1054	-1.065
24	-0.9438	0.0096	-98.68	-0.9626	-0.925
25	-0.6979	0.0091	-76.43	-0.7158	-0.680
26	-0.5580	0.0087	-63.95	-0.5751	-0.540
27	-0.5895	0.0089	-66.57	-0.6069	-0.572
28	-0.3974	0.0084	-47.14	-0.4140	-0.380
29	-0.3661	0.0090	-40.75	-0.3837	-0.348
30	-0.2267	0.0087	-26.21	-0.2437	-0.209
31	-0.1423	0.0085	-16.73	-0.1590	-0.125
32	-0.0320	0.0083	-3.88	-0.0482	-0.015
33	-0.0996	0.0084	-11.88	-0.1160	-0.083
34	-0.0231	0.0082	-2.82	-0.0391	-0.007
35	0.0596	0.0079	7.51	0.0440	0.075
36	0.1152 0.1712	0.0079 0.0073	14.66 23.52	0.0998 0.1569	0.130
37	0.1712	0.0073	21.24	0.1401	0.185 0.168
38	0.1574	0.0073	21.71	0.1432	0.108
40	0.1374	0.0073	18.19	0.1432	0.171
41	0.0338	0.0073	4.40	0.0188	0.147
42	-0.0535	0.0077	-6.82	-0.0689	-0.038
43	-0.1329	0.0078	-16.45	-0.1487	-0.117
44	-0.1273	0.0093	-13.72	-0.1455	-0.117
45	-0.1273	0.0080	-20.43	-0.1433	-0.109
46	-0.2233	0.0082	-27.09	-0.1802	-0.148
47	-0.2233	0.0082	-24.92	-0.2394	-0.207
48	-0.2295	0.0081	-24.32	-0.2154	-0.184
49	-0.0723	0.0075	-9.67	-0.2434	-0.213

50	-0.1150	0.0076	-15.22	-0.1298	-0.1002
51	-0.1676	0.0078	-21.53	-0.1828	-0.1523
52	-0.1481	0.0078	-19.10	-0.1633	-0.1329
53	0.0412	0.0076	5.39	0.0262	0.0562
54	0.0513	0.0077	6.67	0.0362	0.0664
55	0.0718	0.0077	9.38	0.0568	0.0868
56	0.1382	0.0076	18.22	0.1234	0.1531
57	0.1253	0.0075	16.74	0.1106	0.1400
58	0.0526	0.0076	6.89	0.0376	0.0676
59	0.0629	0.0076	8.22	0.0479	0.0778
60	0.1157	0.0075	15.37	0.1010	0.1305
61	0.2566	0.0071	36.37	0.2428	0.2704
62	0.2221	0.0071	31.18	0.2081	0.2361
63	0.2577	0.0071	36.22	0.2438	0.2717
64	0.3252	0.0070	46.48	0.3115	0.3389
65	0.3441	0.0069	49.72	0.3306	0.3577
66	0.2768	0.0070	39.41	0.2631	0.2906
67	0.2633	0.0070	37.54	0.2495	0.2770
68	0.3239	0.0069	47.10	0.3104	0.3374
69	0.3485	0.0070	49.95	0.3348	0.3622
70	0.3153	0.0069	45.38	0.3017	0.3289
71	0.3225	0.0071	45.65	0.3087	0.3364
72	0.3867	0.0069	55.65	0.3731	0.4003
73	0.4757	0.0067	70.57	0.4625	0.4889
74	0.4907	0.0067	73.69	0.4777	0.5038
75	0.4513	0.0068	66.35	0.4380	0.4646
76	0.5599	0.0066	84.34	0.5469	0.5729
77	0.7370	0.0063	116.16	0.7246	0.7494
78	0.6993	0.0064	109.18	0.6867	0.7118
79	0.6936	0.0063	109.67	0.6812	0.7060
80	0.7481	0.0063	118.31	0.7357	0.7604
81	1.0707	0.0063	169.56	1.0583	1.0830
82	0.9636	0.0064	151.27	0.9512	0.9761
83	0.9581	0.0064	149.31	0.9455	0.9707
84	0.9978	0.0064	156.74	0.9854	1.0103
85	0.9827	0.0063	155.36	0.9703	0.9951
86	0.8456	0.0064	131.29	0.8330	0.8583
87	0.8233	0.0065	127.48	0.8107	0.8360
88	0.7895	0.0065	121.84	0.7768	0.8022
89	0.7955	0.0066	120.66	0.7826	0.8084
90	0.6337	0.0067	94.24	0.6205	0.6469
91	0.6245	0.0066	93.99	0.6114	0.6375
92	0.5321	0.0067	79.00	0.5189	0.5453
93	0.4769	0.0066	72.44	0.4640	0.4898
94	0.4157	0.0067	62.43	0.4026	0.4287
95	0.2459	0.0070	34.92	0.2321	0.2597
96	0.0333	0.0075	4.42	0.0185	0.0480
Burney Torr					
Program Type	0.000	0.0040	456.00	0.6367	0.6360
2	-0.6288	0.0040	-156.93	-0.6367	-0.6210
3	-0.6774	0.0045	-150.50	-0.6863	-0.6686
4	-0.5263	0.0157	-33.43	-0.5571	-0.4954
6	-0.3190	0.0065	-48.79	-0.3318	-0.3061
7	-0.7585	0.0065	-116.21	-0.7713	-0.7457
8	-16.2495	0.0595	-272.90 66.79	-16.3662	-16.1328
9	-0.3583	0.0054	-66.78	-0.3688	-0.3477
10	-1.3444	0.0119	-113.01	-1.3677	-1.3211
11	-0.6958	0.0161	-43.29	-0.7273	-0.6643
12	-0.3481	0.0047	-74.32	-0.3573	-0.3389

13	-0.1080	0.0074	-14.68	-0.1224	-0.0936
14	0.0016	0.0048	0.34	-0.0077	0.0110
15	-0.3598	0.0051	-70.01	-0.3699	-0.3498
16	-0.3198	0.0045	-70.79	-0.3287	-0.3110
17	-0.1054	0.0037	-28.10	-0.1127	-0.0980
18	-0.6031	0.0039	-155.61	-0.6107	-0.5955
19	-1.2210	0.0044	-276.35	-1.2296	-1.2123
20	0.5766	0.0068	84.77	0.5633	0.5899
21	0.9240	0.0082	112.23	0.9079	0.9401
22	-0.9008	0.1290	-6.99	-1.1536	-0.6481
23	-0.4854	0.0052	-92.50	-0.4957	-0.4752
24	-2.2066	0.0107	-205.97	-2.2276	-2.1856
25	-0.4632	0.0041	-111.67	-0.4713	-0.4550
26	0.6093	0.0081	74.79	0.5933	0.6252
27	-0.9432	0.0452	-20.85	-1.0319	-0.8546
28	-0.2578	0.0087	-29.56	-0.2749	-0.2408
29	-0.0653	0.0036	-18.21	-0.0724	-0.0583
30	0.0926	0.0122	7.61	0.0687	0.1164
31	-0.4662	0.0039	-118.31	-0.4739	-0.4584
32	0.4022	0.0068	58.72	0.3888	0.4157
Constant	-7.1103	0.0078	-909.78	-7.1256	-7.0949

Distant Viewers	Coefficient Estimate	Robust Standard Error	Z-score	95% Confidence	e Interval
Log of Local Ratings	57676.59	284.064	203.04	57119.84	58233.35
Log of Market Size	0.5259	0.0005	965.00	0.5249	0.5270
Time of Day (Quarter Hour)				+	
2	-0.11361	0.0099	-11.43	-0.1331	-0.0941
3	-0.07808	0.0100	-7.84	-0.0976	-0.0586
4	-0.18438	0.0103	-17.88	-0.2046	-0.1642
5	-0.23538	0.0104	-22.70	-0.2557	-0.2151
6	-0.36567	0.0107	-34.31	-0.3866	-0.3448
7	-0.30897	0.0107	-28.98	-0.3299	-0.2881
8	-0.38512	0.0108	-35.56	-0.4063	-0.3639
9	-0.43840	0.0111	-39.54	-0.4601	-0.4167
10	-0.46437	0.0113	-41.13	-0.4865	-0.4422
11	-0.52010	0.0114	-45.53	-0.5425	-0.4977
12	-0.59776	0.0116	-51.38	-0.6206	-0.5750
13	-0.56427	0.0113	-49.76	-0.5865	-0.5420
14	-0.61112	0.0116	-52.75	-0.6338	-0.5884
15	-0.70648	0.0119	-59.34	-0.7298	-0.6831
16	-0.71315	0.0120	-59.65	-0.7366	-0.6897
17	-0.73006	0.0123	-59.35	-0.7542	-0.7059
18	-0.77131	0.0124	-62.24	-0.7956	-0.7470
19	-0.81369	0.0124	-65.52	-0.8380	-0.7893
20	-0.76760	0.0122	-63.16	-0.7914	-0.7438
21	-0.64978	0.0123	-53.01	-0.6738	-0.6258
22	-0.66233	0.0122	-54.41	-0.6862	-0.6385
23	-0.69178	0.0122	-56.81	-0.7156	-0.6679
24	-0.50476	0.0119	-42.34	-0.5281	-0.4814
25	-0.12399	0.0104	-11.87	-0.1445	-0.1035
26	-0.10483	0.0104	-10.11	-0.1251	-0.0845
27	-0.29475	0.0110	-26.88	-0.3162	-0.2733
28	-0.21762	0.0107	-20.32	-0.2386	-0.1966
29	0.08273	0.0103	8.00	0.0625	0.1030
30	0.27535 0.24718	0.0099	27.88	0.2560	0.2947
31 32	0.24718	0.0099 0.0097	25.04 32.21	0.2278 0.2939	0.2665 0.3320
33	0.18201	0.0099	18.41	0.1626	0.3320
33	0.25699	0.0097	26.37	0.1020	0.2014
35	0.26331	0.0098	26.96	0.2442	0.2825
36	0.31828	0.0096	33.01	0.2994	0.3372
37	0.44490	0.0089	50.02	0.4275	0.4623
38	0.46824	0.0089	52.89	0.4509	0.4856
39	0.43726	0.0089	48.98	0.4198	0.4548
40	0.44708	0.0089	50.46	0.4297	0.4644
41	0.32152	0.0092	34.88	0.3035	0.3396
42	0.18634	0.0095	19.60	0.1677	0.2050
43	0.07357	0.0098	7.54	0.0544	0.0927
44	0.01130	0.0099	1.14	-0.0082	0.0308
45	-0.01344	0.0101	-1.34	-0.0331	0.0063
46	-0.05797	0.0102	-5.67	-0.0780	-0.0379
47	0.03458	0.0099	3.49	0.0152	0.0540
48	0.03174	0.0099	3.20	0.0123	0.0512
49	0.15332	0.0095	16.18	0.1347	0.1719

	T				
50	0.17990	0.0094	19.21	0.1615	0.1983
51	0.06670	0.0098	6.83	0.0476	0.0858
52	0.07314	0.0097	7.56	0.0542	0.0921
53	0.35909	0.0093	38.74	0.3409	0.3773
54	0.32747	0.0095	34.64	0.3089	0.3460
55	0.38588	0.0094	40.99	0.3674	0.4043
56	0.40870	0.0095	43.23	0.3902	0.4272
57	0.34431	0.0094	36.69	0.3259	0.3627
58	0.33392	0.0096	34.96	0.3152	0.3526
59	0.31696	0.0097	32.75	0.2980	0.3359
60	0.36133	0.0095	37.91	0.3426	0.3800
61	0.54096	0.0091	59.64	0.5232	0.5587
62	0.53143	0.0091	58.17	0.5135	0.5493
63	0.57253	0.0090	63.35	0.5548	0.5902
64	0.64755	0.0089	72.80	0.6301	0.6650
65	0.71470	0.0088	81.60	0.6975	0.7319
66	0.69932	0.0088	79.44	0.6821	0.7166
67	0.72801	0.0087	83.35	0.7109	0.7451
68	0.74509	0.0086	86.63	0.7282	0.7619
69	0.79526	0.0086	92.60	0.7784	0.8121
70	0.71253	0.0087	81.84	0.6955	0.7296
71	0.74592	0.0087	85.60	0.7288	0.7630
72	0.87031	0.0085	102.54	0.8537	0.8869
73	0.88364	0.0092	96.35	0.8657	0.9016
74	0.84571	0.0084	100.49	0.8292	0.8622
75	0.92854	0.0085	109.62	0.9119	0.9451
76	1.08637 1.15024	0.0082	132.01	1.0702	1.1025
77		0.0080 0.0081	143.16	1.1345	1.1660
78	1.16274 1.24716	0.0081	144.03 157.55	1.1469 1.2316	1.1786 1.2627
79 80	1.33117	0.0079	169.35	1.3158	1.3466
81	1.59063	0.0073	204.34	1.5754	1.6059
82	1.46832	0.0079	186.00	1.4528	1.4838
83	1.50894	0.0079	191.92	1.4935	1.5244
84	1.51542	0.0079	192.88	1.5000	1.5308
85	1.46037	0.0080	183.12	1.4447	1.4760
86	1.35517	0.0081	168.29	1.3394	1.3710
87	1.30935	0.0081	161.97	1.2935	1.3252
88	1.25600	0.0081	154.82	1.2401	1.2719
89	1.41086	0.0080	176.11	1.3952	1.4266
90	1.23387	0.0082	151.25	1.2179	1.2499
91	1.12168	0.0083	135.72	1.1055	1.1379
92	0.97500	0.0084	115.84	0.9585	0.9915
93	0.78293	0.0084	93.35	0.7665	0.7994
94	0.61086	0.0086	71.19	0.5940	0.6277
95	0.48141	0.0089	54.25	0.4640	0.4988
96	0.31974	0.0094	34.00	0.3013	0.3382
Program Type					
2	-0.59052	0.0042	-141.09	-0.5987	-0.5823
3	-0.55097	0.0048	-114.01	-0.5604	-0.5415
4	-0.40786	0.0153	-26.62	-0.4379	-0.3778
6	0.42436	0.0055	77.25	0.4136	0.4351
7	-0.74554	0.0067	-111.61	-0.7586	-0.7324
8	-20.66413	0.0384	-538.80	-20.7393	-20.5890
9	-0.40721	0.0069	-59.14	-0.4207	-0.3937
10	-1.15563	0.0116	-100.03	-1.1783	-1.1330
11	-1.02447	0.0223	-45.86	-1.0682	-0.9807
12	-0.27060	0.0050	-53.77	-0.2805	-0.2607

13	-0.36233	0.0120	-30.16	-0.3859	-0.3388
14	-0.30581	0.0053	-58.02	-0.3161	-0.2955
15	-0.26964	0.0051	-52.81	-0.2797	-0.2596
16	-0.35085	0.0046	-76.41	-0.3598	-0.3418
17	-0.15376	0.0038	-40.13	-0.1613	-0.1463
18	-0.71364	0.0042	-170.61	-0.7218	-0.7054
19	-0.90191	0.0046	-195.44	-0.9110	-0.8929
20	1.03204	0.0054	192.14	1.0215	1.0426
21	0.71317	0.0092	77.34	0.6951	0.7312
22	-20.07471	0.0140	-1428.85	-20.1022	-20.0472
23	-0.46737	0.0054	-86.56	-0.4779	-0.4568
24	-1.46102	0.0084	-174.32	-1.4774	-1.4446
25	-0.45548	0.0044	-103.63	-0.4641	-0.4469
26	0.52586	0.0096	54.52	0.5070	0.5448
27	-0.55840	0.0489	-11.41	-0.6543	-0.4625
28	-0.40487	0.0099	-40.97	-0.4242	-0.3855
29	-0.26196	0.0037	-70.65	-0.2692	-0.2547
30	-0.65867	0.0238	-27.67	-0.7053	-0.6120
31	-0.24612	0.0040	-61.53	-0.2540	-0.2383
32	0.33389	0.0072	46.41	0.3198	0.3480
Constant	-8.86271	0.0103	-856.42	-8.8830	-8.8424

		Table C-5: 95% Confidence Intervals Corresponding to Distant Viewing Estimates, 2010-2013					
2010	2011	2012	2013				
1.94% - 1.99%	3.89% - 3.96%	3.55% - 3.62%	5.10% - 5.22%				
15.70% - 15.94%	11.94% - 12.15%	15.36% - 15.63%	10.48% - 10.74%				
1.15% - 1.23%	2.37% - 2.51%	1.03% - 1.11%	1.06% - 1.14%				
50.79% - 51.13%	49.76% - 50.11%	36.00% - 36.34%	44.83% - 45.37%				
27.82% - 28.07%	28.96% - 29.21%	41.50% - 41.80%	33.09% - 33.49%				
2.06% - 2.19%	2.48% - 2.71%	1.98% - 2.14%	4.37% - 5.17%				
	1.94% - 1.99% 15.70% - 15.94% 1.15% - 1.23% 50.79% - 51.13% 27.82% - 28.07%	1.94% - 1.99% 3.89% - 3.96% 15.70% - 15.94% 11.94% - 12.15% 1.15% - 1.23% 2.37% - 2.51% 50.79% - 51.13% 49.76% - 50.11% 27.82% - 28.07% 28.96% - 29.21%	1.94% - 1.99% 3.89% - 3.96% 3.55% - 3.62% 15.70% - 15.94% 11.94% - 12.15% 15.36% - 15.63% 1.15% - 1.23% 2.37% - 2.51% 1.03% - 1.11% 50.79% - 51.13% 49.76% - 50.11% 36.00% - 36.34% 27.82% - 28.07% 28.96% - 29.21% 41.50% - 41.80%				

DECLARATION OF JEFFREY S. GRAY, PH.D.

I declare under penalty of perjury that the foregoing testimony is true and correct, and of my personal knowledge.

Executed on April 3, 2017

Jeffrey S. Gray(Ph.D.

Certificate of Service

I hereby certify that on Monday, February 19, 2018 I provided a true and correct copy of the Written Direct Testimony of Jeffrey S. Gray, Ph.D., filed December 22, 2016 in Docket No. 14-CRB-0010-CD (2010-13), and amended March 9, 2017, and corrected April 3, 2017. to the following:

Joint Sports Claimants, represented by Michael E Kientzle served via Electronic Service at michael.kientzle@apks.com

Devotional Claimants, represented by Michael A Warley served via Electronic Service at michael.warley@pillsburylaw.com

Canadian Claimants Group, represented by Lawrence K Satterfield served via Electronic Service at Iksatterfield@satterfield-pllc.com

Public Broadcasting Service (PBS), represented by Ronald G. Dove Jr. served via Electronic Service at rdove@cov.com

Commercial Television Claimants (CTC), represented by Ann Mace served via Electronic Service at amace@crowell.com

Signed: /s/ Lucy H Plovnick

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

In re)	
DISTRIBUTION OF CABLE)	NO. 14-CRB-0010-CD (2010-13
ROYALTY FUNDS)	1,0,11 010 0010 02 (2010 10)
)	

Written Rebuttal Testimony of

DR. MARK A. ISRAEL

September 15, 2017

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I. QUALIFICATIONS

- 1. I am a Senior Managing Director of Compass Lexecon, an economic consulting firm where I have worked since 2006. I received my Ph.D. in Economics from Stanford University in 2001. From August 2000 to June 2006, I served as an Associate Professor at Northwestern University's Kellogg School of Management. I have served as an expert for both the federal government and private parties in matters involving the cable television, broadcast television, wired and wireless telecommunications and broadband internet service industries (among others), including high profile recent mergers such as Comcast-NBCU, AT&T-Time Warner, AT&T-Leap Wireless, T-Mobile-Metro PCS, and numerous acquisitions for Gray Television, as well as many regulatory matters in front of the FCC and state regulatory agencies on behalf of cable system operators (CSOs), the National Association of Broadcasters, and others.
- 2. A more complete description of my qualifications can be found in Appendix A to my written direct testimony in this proceeding on behalf of the Joint Sports Claimants (JSC).¹

II. INTRODUCTION AND SUMMARY

3. In my original testimony, I explained that observable marketplace behavior corroborates the results of the 2010-13 Bortz surveys.² In particular, my regression analysis—based on an updated and improved version of the methodology used by Professors Rosston and Waldfogel in previous cable royalty distribution proceedings³—

Written Direct Testimony of Dr. Mark A. Israel, *In re Distribution of Cable Royalty Funds*, December 22, 2016, (hereinafter *Israel Testimony*).

² "Cable Operator Valuation of Distant Signal Non-Network Programming: 2010-13" (hereinafter *Bortz Report*), attached to the Written Direct Testimony of James M. Trautman, *In re Distribution of Cable Royalty Funds*, December 22, 2016.

Statement of Joel Waldfogel, In the Matter of Distribution of the 2004 and 2005 Cable Royalty Funds Before the Copyright Royalty Judges, Docket No. 2007-3 CRB CD 2004-2005, June 1, 2009 (hereinafter Waldfogel Report); Statement of Gregory Rosston, In the Matter of Distribution of the 1998 and 1999 Cable Royalty Funds Before the Copyright Arbitration Royalty Panel, Docket No. 2001-8 CARP CD 98-99, December 1, 2002 (hereinafter Rosston Report).

produces relative valuations of the Agreed Categories⁴ that closely match those in the Bortz surveys. My analysis of payments made by cable networks to carry JSC and other programming during the years 2010-13 further corroborates the high relative valuations for live team sports (Sports) programming found in the Bortz surveys.

- 4. In this report, I respond to written testimony from other parties in the proceeding.⁵ I conclude that the testimony from experts on behalf of other parties, as well as the updated analyses I have performed in response to this testimony, further corroborate the results of the 2010-13 Bortz surveys. I provide a more detailed discussion of my analysis of the testimony of the other experts in the following paragraphs.
- 5. First, the regression analysis presented by Dr. Gregory Crawford on behalf of Commercial TV Claimants directly supports the 2010-13 Bortz survey results. Indeed, although we conducted our analyses entirely independently of each other, we both came to comparable conclusions that corroborate the Bortz results. Notably, his estimates are similar to mine despite some differences in technical methodological choices (of the type that regularly occur across different regression analyses by different economists).
- 6. Second, the alternative versions of my model that Dr. Erkan Erdem produced on behalf of Devotional Claimants also support the results of the 2010-13 Bortz surveys. However, Dr. Erdem's criticisms of "Waldfogel-type" regression analysis in the context of this proceeding generally, and of my regression analysis in particular, are without merit. As the Copyright Royalty Judges (Judges) and the Copyright Arbitration Royalty

The Copyright Royalty Judges' 11/25/2015 Order, Exhibit A. The Agreed Categories are 1) Program Suppliers, 2) Commercial Television Claimants (CTV), 3) Joint Sports Claimants (Sports), 4) Public Television Claimants (PTV), 5) Devotional Claimants (Devotional), 6) Canadian Claimants (Canadian). See *Israel Testimony* ¶15 for more detail. In addition to these categories, there are the (1) Music Claimants (Music) category, which covers the music works included within broadcast programming and (2) National Public Radio (NPR) category, which covers programming on non-commercial radio stations. I understand that Music and NPR are no longer parties in this proceeding.

I address those opinions for which I have a specific response based on my own analysis; any lack of explicit response to a particular opinion or analysis of Claimants' testimony does not imply that I agree with that opinion or analysis. Instead, it likely implies that my previous testimony and underlying materials are already fully responsive to such opinions and analyses.

Panel (CARP) previously found, such an analysis is useful in assessing whether the actual economic behavior of CSOs corroborates the Bortz survey results.

- 7. Third, I agree with Mr. John Sanders' testimony on behalf of Devotional Claimants "that a constant sum survey of cable operators such as that prepared by Bortz is the most appropriate methodology for the Allocation phase of a cable royalty proceeding." However, Mr. Sanders' criticisms of regression analysis in this proceeding are unfounded.
- 8. Fourth, Dr. Jeffrey Gray's testimony on behalf of Program Suppliers in which he focuses upon the volume and viewing of minutes of programming does not provide a sound basis for determining the relative value of that programming. Dr. Gray's analysis of volume is fundamentally flawed in that it fails to consider differences in the number of cable subscribers who receive the programming in question. And his analysis of viewership fails to recognize that CSOs place far greater value per minute on some types of programming (e.g., Sports) than others, as actual marketplace behavior shows. Bottom line, neither program volume nor program viewing can be equated with program value.
- 9. Fifth, Dr. Steckel's criticisms of the Bortz survey, on behalf of Program Suppliers, are incorrect as a matter of economics. Despite Dr. Steckel's claim to the contrary, surveys of CSO executives provide the best measure of the relative valuation of the Agreed Categories on distant signals, particularly given that in the ordinary course of business those executives must evaluate the relative value of different categories of programming to make programming choices. Moreover, Dr. Steckel advocates the use of marketplace data to determine relative value of the Agreed Categories, which further emphasizes the importance of regression analyses like mine and Dr. Crawford's (among others) that corroborate the Bortz survey results using actual marketplace data.
- 10. Sixth, Mr. John Mansell's analysis of the growth in available content, submitted on behalf of Program Suppliers, actually underscores the high value placed on Sports

Amended Direct Testimony of John S. Sanders, *In re Distribution of Cable Royalty Funds*, March 9, 2017 (hereinafter *Sanders Amended Testimony*), p. 29.

programming. In particular, it points to reasons why the value of Sports, relative to other types of programming, is *increasing*, as reflected in a comparison of the 2004-05 and 2010-13 Bortz results. Mr. Mansell overlooks that recent technological changes in the media environment have negatively and disproportionately impacted the value of other types of programming, such as Program Suppliers content, while the value of Sports programming has remained high.

- 11. Seventh, my regression analysis corroborates the findings of the Bortz surveys, but does not corroborate the Horowitz surveys on behalf of Program Suppliers. In particular, the Bortz surveys, the results of my regression, and Dr. Crawford's regression each show the rank order for the top program categories as Sports, Program Suppliers, CTV and PTV, in that order, while Horowitz surveys do not match this rank order. The fact that the Horowitz survey fails to correspond well to actual marketplace evidence, as captured by the regression analyses, is not surprising given the flaws in the Horowitz methodology laid out in the testimony of Mr. James Trautman and Dr. Nancy Mathiowetz.⁷ And notably, the fact that my regression analysis, as well as Dr. Crawford's, correctly allocates the minutes in Mr. Horowitz's "Other Sports" category into the appropriate Agreed Categories, and yet still closely matches the Sports values found in the Bortz survey, refutes Mr. Horowitz's claim that the Bortz survey is somehow invalidated by not using a separate valuation question for "Other Sports" programming.
- 12. Finally, the testimony of Dr. Lisa George on behalf of Canadian Claimants is flawed. Her finding of a higher value for Canadian Programming comes not from her focus on the Canadian region, but rather from her improper, complete reliance on a model that collapses all types of programming on U.S. signals into a single catch-all category. Once one properly controls for all of the Agreed Categories, Dr. George's model

See Written Rebuttal Testimony of James M. Trautman, *In re Distribution of Cable Royalty Funds*, September 15, 2017 (hereinafter, *Trautman Rebuttal Testimony*); and Written Rebuttal Testimony of Nancy A. Mathiowetz, *In re Distribution of Cable Royalty Funds*, September 15, 2017 (hereinafter, *Mathiowetz Rebuttal Testimony*).

produces small shares for Canadian Claimants, consistent with the findings of the Bortz surveys.

III. DR. GREGORY CRAWFORD'S REGRESSION ANALYSIS ON BEHALF OF THE COMMERCIAL TELEVISION CLAIMANTS FURTHER CORROBORATES THE 2010-13 BORTZ SURVEY RESULTS

- 13. In his testimony, Dr. Crawford describes the results of his regression analysis, with which he estimates the relative marketplace value of the Agreed Categories.⁸ His overall methodological approach is similar to mine, but he uses different data and makes some different econometric implementation decisions. Despite the technical differences between our approaches, Dr. Crawford finds relative marketplace values for the Agreed Categories that are similar to mine, and his results also corroborate the relative shares implied by the Bortz survey, demonstrating the robustness of this finding.
- 14. The Bortz surveys, my analysis, and Dr. Crawford's analysis each identify Sports programming as the most valuable category of compensable programming, with similar shares in each case. The Bortz surveys estimate a Sports share of 38.2 percent; I find a Sports share of 37.5 percent, and Dr. Crawford finds a Sports share of 35.1 percent. All three analyses estimate that Program Suppliers should receive the second largest share from the royalty fund, and all find similar shares for CTV. See Table 1, below, as well as Figure 1 which illustrates the same sets of results graphically.

See Corrected Testimony of Gregory S. Crawford, Ph.D. (April 11, 2017) (hereinafter *Crawford Corrected Testimony*).

Table 1: Comparison of Israel, Crawford and Bortz Results

_	Implied Share of Royalties			
Claimant Group	Israel	Crawford	Bortz	
Sports	37.5%	35.1%	38.2%	
Program Suppliers	26.8%	23.4%	31.0%	
CTV	22.2%	19.5%	20.6%	
PTV	13.5%	17.0%	5.1%	
Devotional	0.0%	0.7%	4.6%	
Canadian	0.0%	4.2%	0.5%	
Total	100.0%	100.0%	100.00%	

Source: Israel Testimony, December 22, 2016, Table V-2;

Crawford Corrected Testimony, April 11, 2017, Figure 20.

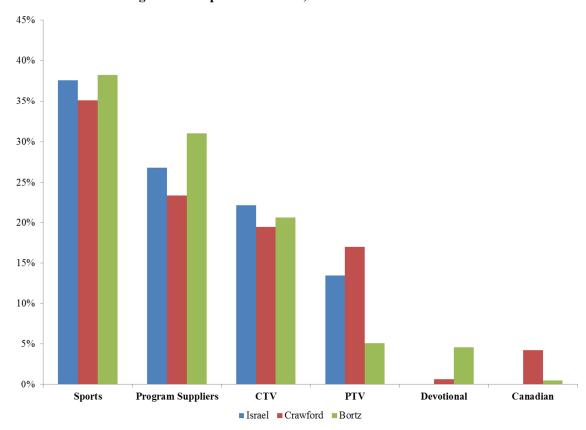
Bortz Report, December 22, 2016, Table I-1.

Notes: Israel analysis spans 2010-2012;

Crawford analysis spans 2010-2013;

Bortz analysis spans 2010-2013.

Figure 1: Comparison of Israel, Crawford and Bortz Results



15. One difference between my regression and Dr. Crawford's is that he includes a regression for the year 2013, while my analysis examined the years 2010-12. Notably,

Dr. Crawford's regression results using 2013 data also closely match the 2013 Bortz survey results, further corroborating the Bortz survey results. And Dr. Crawford's results for 2013 are also similar to my overall results for the years 2010-12, indicating that extending my analysis to include 2013 would not materially alter my findings. Dr. Crawford's 2013 regression implies a royalty share for Sports of approximately 38.6 percent, whereas the Bortz survey for 2013 finds a Sports share of approximately 37.7 percent, and my average result for 2010-12 is 37.54 percent. (See Table 2, below.) Therefore, Dr. Crawford's analysis corroborates the Bortz survey for 2013 and indicates that my focus on the period 2010-12 does not bias my results.⁹

Table 2: Comparison of Bortz 2013 Results to Crawford 2013 Results

_	2013 Implied Sh	nare of Royalties
Claimant Group	Bortz	Crawford
Sports	37.7%	38.6%
Program Suppliers	27.3%	19.7%
Commercial TV	22.7%	18.4%
Public Broadcasting	6.2%	18.1%
Devotional	5.0%	0.5%
Canadian	1.2%	4.7%
Total	100.00%	100.00%

Source: Bortz Testimony, December 22, 2016, Table I-1.

Crawford Corrected Testimony, April 11, 2017, Figure 20.

In addition, Dr. Crawford gets his highest implied royalty allocation for Sports in 2013, indicating that if I had included data for 2013 in my regression analysis, it likely would have found an even greater average value for Sports programming.

IV. RESPONSES TO OTHER CLAIMANTS' WRITTEN TESTIMONY

- A. DR. ERDEM'S ANALYSIS ON BEHALF OF DEVOTIONAL CLAIMANTS
 LARGELY CORROBORATES THE BORTZ SURVEY RESULTS, AND HIS
 CRITICISMS OF THE USE OF REGRESSION ANALYSES IN THIS PROCEEDING
 ARE WITHOUT MERIT
 - 1. Dr. Erdem's challenges to the use of regression analysis in this proceeding are without merit
- 16. Although he acknowledges that "Waldfogel-type" regressions may have some value in corroborating survey evidence, ¹⁰ Dr. Erdem criticizes the use of regression analysis in this proceeding on two principal grounds. First, he claims that "regression approaches cannot inform the Judges on what the CSOs would have paid for each claimant category in a free market," because CSOs are purchasing distant signal programming in a regulated market. Second, he claims that the regression approach is not valid because it "assume[s] that the 'value' of a program category is measured in minutes of programming." Both of Dr. Erdem's criticisms are unfounded.
- 17. **First,** Dr. Erdem is wrong that regression approaches like mine or Dr. Crawford's (or those of Drs. Waldfogel and Rosston before us) cannot inform the Judges on what CSOs would have paid for each of the Agreed Categories of programming in a hypothetical free market. As I explained in my original testimony in this proceeding, the regression allows me to determine how much more CSOs pay for each additional minute of a given type of content, holding other factors constant, which is exactly the sort of direct evidence on their willingness to pay for each type of content that one needs to corroborate the Bortz survey results using actual marketplace behavior: 12

Testimony of Erkan Erdem, Ph.D., *In re Distribution of Cable Royalty Funds*, March 9, 2017 (hereinafter, *Erdem Testimony*), p. 18.

¹¹ Erdem Testimony, p. 14.

See *Israel Testimony*, pp. 11-12. See also *Crawford Corrected Testimony*, p. 13 ("one can exploit the fact that distant broadcast signals are themselves bundles of programming content (and that this content varies across distant signals) to measure their relative marketplace value, even in the presence of regulated prices.")

Although there is no marketplace price for the distant signal content, marketplace information can be gleaned from CSO carriage decisions and, in particular, what CSOs pay as a function of what they choose to carry. The regression enables me to determine the effective price the CSOs pay for each category of content by determining how much their payments go up with an additional minute of each category of content, holding other relevant factors constant.

- 18. Dr. Erdem is also mistaken that regression analysis cannot be informative in this context simply because the market is regulated. In past proceedings, the parties have agreed that "the sole governing standard is the relative marketplace value of the distant broadcast signal programming retransmitted by cable systems." And regression analysis is a highly effective tool in this context to use the actual evidence of CSO decisions on distant signal carriage to estimate the average relative value of the Agreed Categories.
- 19. Indeed, in the 2004-05 cable royalty proceeding, the Judges found the Waldfogel regression helpful to corroborate the 2004-05 Bortz survey results. ¹⁴ Similarly, the Copyright Arbitration Royalty Panel found Dr. Rosston's regression analysis useful in corroborating the 1998-99 Bortz survey results. ¹⁵ Accordingly, I employed a similar regression analysis here to help the Judges assess the 2010-13 Bortz surveys results.
- 20. My approach is also entirely consistent with standard methods in economics. Indeed an important purpose of much empirical analysis in economics, particularly "industrial organization" economics, is to use observed behavior under one set of conditions to model what would happen under another set of conditions. For example, studies will often use empirical results in the absence of a particular regulation to predict

Federal Register /Vol. 75, No. 180 / Friday, September 17, 2010. Page 57065.

Federal Register /Vol. 75, No. 180 / Friday, September 17, 2010. Page 57069.

Report of the Copyright Arbitration Royalty Panel to the Librarian of Congress, October 21, 2003, p. 21. As the Librarian of Congress concluded in affirming this decision, regression analysis measures "actual behavior" and responds to past criticism of the Bortz surveys that those surveys measure only "attitudes" rather than "actual behavior." Federal Register /Vol. 69, No. 16 / Monday, January 26, 2004. Page 3615.

the effects of that regulation, or empirical results in a regulated environment to predict the effects of competition following a change in the extent of regulation.¹⁶

- 21. **Second,** Dr. Erdem is also incorrect to characterize my regression analysis as a simple time-based study (that is, a study in which valuation is determined only by minutes). I agree with Dr. Erdem that "it would be a significant simplification and mistake to assume that the 'value' of a program category is measured in minutes of programming." In fact, that is why, in all of my analyses, I account for the fact that not all programming minutes are created equal, and thus do not assume value is measured in minutes, but rather account for the differential value of minutes of different types of programming. For example, I consistently find and rely on the fact that Sports minutes are more valuable than other types of programming minutes.¹⁸
- 22. Dr. Erdem does not offer a clear alternative to studying the relationship of minutes and royalties, but does offer one specific criticism: that minutes of programming could be replaced by the number of individual programs as a unit of measure, meaning that a 60 minute show or a 30 minute show would each be counted as one unit. ¹⁹ This makes no economic sense. The exercise here requires a comparison of the value of different types of programming with different lengths. A baseball game may last three hours, as long as several standard TV shows. Hence, a viewer watching a baseball game could have instead watched, say, six sitcoms in the same period of time. It would make no sense to count each of the programs as one unit, but rather makes sense to determine the value of two possibilities for three hours' worth of content.

See for example Mian Dai and Xun Tang, "Regulation and Capacity Competition in Health Care: Evidence From U.S. Dialysis Markets," *The Review of Economics and Statistics*, December 2015, 97(5): 965–982; Pierre Dubois, Rachel Griffith, Martin O'Connell, "The Effects of Banning Advertising in Junk Food Markets," *Review of Economic Studies* (2017) 0, 1–41; Claudio Lucarelli, Jeffrey Prince, Kosali Simon, "The Welfare Impact of Reducing Choice in Medicare Part D: A Comparison of Two Regulation Strategies," *International Economic Review* Vol. 53, No. 4, November 2012.

Erdem Testimony, p. 14.

¹⁸ *Israel Testimony*, pp. 23-30.

¹⁹ Erdem Testimony, p. 14.

23. Dr. Erdem's claim that "CSOs may value a short program (e.g., 30-minutes) more than they value a longer program (e.g., 90-minutes) or that they may value a weekly program more than a daily program" does nothing to refute my point that one should compare value by minute. If a 30-minute program is worth more than a 90-minute program, a CSO would surely choose (if possible given other constraints) to replace the 90-minute program with the 30-minute program. But it would also then have an additional 60 free minutes on which to air other valuable content. Only by comparing programming values by minute, as I do in my regression analysis, can one accurately compare the full value of two blocks of content that could fill a given time span.

2. Dr. Erdem's testimony supports a high relative value for Sports programming

24. Dr. Erdem performs several experiments on my regression model.²¹ Although I believe that the methodology used in my regression was appropriate and Dr. Erdem's adjustments are unwarranted,²² I also note that Dr. Erdem's alternative approaches *actually support* my finding of a high relative value on live Sports programming. In particular, Dr. Erdem's model 4B, which he notes is "very broadly comparable to the

Erdem Testimony, p. 14.

Erdem Testimony, p. 14.

²² There are at least three fundamental problems with Dr. Erdem's experiments, each of which renders them econometrically invalid. First, Dr. Erdem misunderstands the nature of the CDC data, and his calculation of "distant subscribers" double-counts subscribers, and thus results that include this measure are not informative. Second, Dr. Erdem's addition of log transformed and exponential versions of level variables that I already include in my regression model is not standard practice, and I have never seen it used before. Instead, it is an example of simply "fishing" for a specification that changes my result – throwing variables into a model until the result changes. One can nearly always find a way to change a result, but if this is done by simply adding multiple versions of the same variable to the model with no economic justification, it is not informative and cannot invalidate the result. Third, Dr. Erdem is wrong to exclude what he calls "influential observations" in my regression model. The purpose of this regression analysis is to study the relationship established by the full set of data, representing all Form 3 CSOs. Indeed even the authors Dr. Erdem cites for this statistical practice, themselves state "influential data points, of course, are not necessarily bad data points; they may contain some of the most interesting sample information." [Emphasis added.] See Belsley, D. E. Kuh, and R. E. Welsch, 1980. Regression Diagnostics: Identifying Influential Data and Sources of Collinearity. New York: Wiley, p. 3.

results from both the Bortz and Horowitz surveys"²³ and which Mr. Sanders highlights in his testimony, ²⁴ implies a 45 percent share for Sports programming. In addition, the average of Dr. Erdem's various regression models imply a 41.5 percent share of the royalty fund for Sports programming. Both of these results are similar to (indeed higher than) the average result of the 2010-13 Bortz surveys (38.2 percent), and generally in-line with my results and Dr. Crawford's results.

25. More generally, Dr. Erdem's results are broadly consistent with the valuations in the 2010-13 Bortz surveys, showing, for example, the same rank order for Sports, Program Suppliers, CTV and Public Television ("PTV"). (See Table 3.)

Table 3: Comparison of Erdem Regression Results with Bortz, Israel and Crawford

Programming Category	Bortz Survey Average 2010-2013	Israel Regression 2010-2012	Crawford Regression 2010-2013	Erdem Regression 4B 2010-2012	Erdem Regression Average 2010-2012
Sports	38.2%	37.5%	35.1%	45.0%	41.5%
Program Suppliers	31.0%	26.8%	23.4%	22.6%	22.4%
CTV	20.6%	22.2%	19.5%	21.6%	16.3%
PTV	5.1%	13.5%	17.0%	7.0%	7.1%
Devotional	4.6%	0.0%	0.7%	3.8%	2.7%
Canadian	0.5%	0.0%	4.2%	0.0%	0.0%

Source: Israel Testimony, December 22, 2016, Table V-2; Crawford Corrected Testimony, April 11, 2017, Figure 20; Bortz Report, December 22, 2016, Table I-1; Erdem Testimony, March 9, 2017, Exhibit 13

Erdem Testimony, p. 18.

Sanders Amended Testimony, p. 18.

- B. Mr. Sanders' testimony on behalf of devotional claimants supports the use of the 2010-13 bortz surveys to determine royalty shares, and his criticisms of the regression analyses in this proceeding are without merit
 - 1. Mr. Sanders correctly concludes that the 2010-13 Bortz survey results should be the basis for determining each program category's royalty share
- 26. I agree with Mr. Sanders that the 2010-13 Bortz surveys should be the basis for the Judges' allocation of royalty shares among the Agreed Categories of programming.²⁵ As noted above, my empirical analysis of marketplace outcomes supports the results of the Bortz surveys for royalty allocation. As such, I support the results of the 2010-13 Bortz surveys for the royalty allocation to all parties, including Devotional Claimants.
- 27. However, I also note that the Judges' prior adjustment of the Devotional Claimants' share was based in part on a conclusion that the 2004-05 Bortz survey results likely represented a ceiling on the Devotional share due to "the amount and significance of non-compensable devotional programming contained on WGN-A during the period." The 2010-13 Bortz surveys included improvements that mitigate (but do not eliminate) the impact of WGNA non-compensability, and hence, using the same logic, the 2010-13 Bortz survey results should be regarded as a ceiling on the Devotional allocation of the 2010-13 royalties. Additionally, the results of my regression and Dr. Crawford's, like those of Dr. Waldfogel in the 2004-05 proceeding, "point[] toward a lower share" for the Devotional category than the Bortz surveys imply. 28

Sanders Amended Testimony, p. 9. ("I believe the Bortz Survey, as structured in the 2004-2005 case and as updated for this 2010-2013 proceeding, identifies the appropriate buyers of retransmission services and presents this category of buyers' views of the relative marketplace value of specific categories of programs.")

Federal Register /Vol. 75, No. 180 / Friday, September 17, 2010. Page 57074.

²⁷ Bortz Report, pp. 5-7, 18-19, 27-30, 47-49.

Federal Register /Vol. 75, No. 180 / Friday, September 17, 2010. Page 57069.

2. Mr. Sanders' criticisms of regression analyses in this proceeding are incorrect

- 28. Mr. Sanders is incorrect in asserting that regression analysis is an inappropriate methodology for this proceeding. In general, his arguments echo Dr. Erdem's criticisms and are incorrect for the same reasons discussed above.
- 29. Mr. Sanders also takes issue with the use of "independent variables such as numbers of subscribers, number of channels, population served, and the like, which bear a relationship to programming decisions that is tangential at best.... They may yield a result that, while statistically compelling in an illusory manner, is meaningless for the purpose of an allocation phase royalty distribution." Mr. Sander's argument makes no sense as a matter of econometrics. Such variables are also referred to as "control variables" and are a standard component of a regression analysis, used to ensure that my results isolate the effects of additional minutes of programming on CSO payments without instead capturing spurious correlation with other factors that are not controlled for. By using such control variables, my regression analysis is able to tease out the amount that "CSO royalty payments increase with each additional minute of each category of programming content, *holding other relevant factors that determine royalty payments fixed*[.]"
- 30. I also note that the control variables that I use in my regression are essentially those used by Drs. Waldfogel and Rosston in previous proceedings, and are similar to those used by Dr. Crawford. The reason we have all used such control variables is that they clearly relate to the amount of royalties that CSOs pay for distant signals, and thereby serve as important controls to isolate the main relationship of interest: the relative marketplace value of a minute of the Agreed Categories of programming.³¹

Sanders Amended Testimony, pp. 19-20.

See *Israel Testimony*, paragraph 34. (Emphasis added)

For example, CSO royalties are, in part, a function of the number of CSO subscribers. CSOs pay royalties to the fund based on their gross receipts from the subscribers to whom they transmit distant signals. Therefore, my regression must include a control variable that measures the number of subscribers for each CSO. Other independent

- C. DR. GRAY'S TESTIMONY ON BEHALF OF PROGRAM SUPPLIERS RELIES ON FUNDAMENTALLY FLAWED MEASURES OF PROGRAMMING VOLUME AND VIEWERSHIP THAT PROVIDE NO VALID ECONOMIC BASIS FOR DETERMINING RELATIVE MARKETPLACE VALUE
- 31. Dr. Gray's testimony focuses on "two measures of relative economic value of programming: programming volume and programming viewership." For the purposes of his testimony, programming volume is the "total volume of minutes of programming retransmitted by CSOs" and viewership is the "[a]udience size, which is determined through program viewership." Although he presents and discusses results on programming volume, Dr. Gray ultimately concludes that programming volume is an "imperfect" and "insufficient" measure of relative marketplace value. Hut as to his viewership measure, he concludes that "... relative program viewership provides a reasonable and reliable measure of the relative economic value of distantly retransmitted programing."
- 32. Dr. Gray's conclusions are without any economic merit. Neither of Dr. Gray's metrics volume or viewing provides a sound measure of the relative economic value of the Agreed Categories.
 - His measures of programming volume are meaningless, as they do not account for
 the number of CSOs that transmit each network, let alone the number of CSO
 subscribers receiving programming, and thus do not show the extent to which
 CSOs are retransmitting (purchasing) that programming. In any event, as Dr.

variables, such as the number of local broadcast channels a CSO carries, help me to control for demand factors that might affect a CSO's willingness to pay for additional programming – if a CSO already has an abundance of non-distant broadcast signals, it will less willing to pay for distant signals, all else equal. This relationship is confirmed in my analysis. See *Israel Testimony*, Table V-1, p. 18, showing a negative relationship between the number of local broadcast channels carried by a CSO and the distant signal royalties paid by that CSO, holding all other factors constant.

- Corrected Amended Testimony of Jeffrey S. Gray, Ph.D., *In re Distribution of Cable Royalty Funds*, April 3, 2017, (hereinafter, *Gray Corrected Amended Testimony*), p. 8.
- Gray Corrected Amended Testimony, p. 9.
- Gray Corrected Amended Testimony, pp. 9, 17.
- 35 Gray Corrected Amended Testimony, p. 20.

Gray appears to acknowledge, relative volume does not equate with relative value.

• His reliance on programming viewership as a measure of relative economic value ignores the fact that not all programming minutes are equal: Viewers value minutes of different content differently, as I (and others) have shown for the Agreed Categories in this case. As such, viewership minutes do not determine the value of programming aired on distant signals. Rather, valid estimates of royalty shares in this proceeding must account for variation in the value per minute across categories. The Bortz surveys provide a reliable measure of these valuations, as my and Dr. Crawford's regression analyses confirm.

1. Dr. Gray's analysis of programming volume is incorrect and does not reflect relative marketplace value

- 33. Dr. Gray calculates what he calls "relative volume of programming by claimant category," which he admits is an "imperfect" measure of relative marketplace valuations. According to Dr. Gray, the "total volume of minutes of programming *retransmitted* by CSOs effectively represents the volume of programming purchased by the CSOs" He purports to calculate that volume by measuring the number of distant signal programs and minutes of those programs based on his sample of television stations retransmitted during 2010-13. In Table 1 of his testimony, Dr. Gray reports shares of "All Volume" for each of the Agreed Categories, which show a Sports share of less than 1 percent for each year from 2010 -13 and a Program Suppliers share of approximately 50 percent. Between the calls "relative volume of relative marketplace" and sport share of approximately 50 percent. Between the calls "relative volume of relative marketplace" and sport share of approximately 50 percent. Between the calls "relative volume of relative marketplace" and sport share of the call volume of programs and sample of television stations retransmitted during 2010-13. In Table 1 of his testimony, Dr. Gray reports share of less than 1 percent for each year from 2010 -13 and a Program Suppliers share of approximately 50 percent.
- 34. Beyond his own admission that volume is an imperfect measure of valuation, Dr. Gray's Table 1 is flawed and misleading, because it does not account for the number of CSOs that receive each distant signal, let alone the number of subscribers to whom the

See *Gray Corrected Amended Testimony*, pp. 11, 15-17.

See *Gray Corrected Amended Testimony*, p. 9 (emphasis added).

See *Gray Corrected Amended Testimony*, pp. 15-17.

programming is retransmitted. Thus, it does not measure the "total volume of minutes retransmitted" by CSOs, as Dr. Gray claims. Instead, Dr. Gray measures the volume of minutes televised by distant signals without regard to the number of CSOs that retransmitted those minutes or to the number of distant subscribers to whom CSOs retransmitted those minutes. Dr. Gray's analysis weights the minutes by a sampling weight, which is unrelated to the number of CSOs that retransmit the signal.³⁹

- 35. Hence, Dr. Gray's volume analysis is unrelated to how many (or few) CSOs retransmitted that programming or how many (or few) CSOs' subscribers received it. As a result, a 120 minute movie broadcast on a single station retransmitted to 500 distant subscribers could be given equal weight to a 120 minute NBA telecast on WGNA, which hundreds of CSOs retransmitted to over 40 million distant subscribers.⁴⁰ Therefore, Dr. Gray's measure of volume does not properly account for the fact that distant signals are retransmitted by various CSOs to subscribers.⁴¹
- 36. Dr. Crawford has presented an analysis that demonstrates the large impact of Dr. Gray's errors. In particular, Dr. Crawford's Figure 12 accounts for both the number of CSOs that transmit a distant signal and the number of subscribers receiving it, yielding a subscriber-weighted share of compensable minutes for Sports of roughly 5.9 percent, as compared to Dr. Gray's figure of a less than 1 percent Sports share. See Table 4, below.

Dr. Gray's sampling weights simply adjust for the sampling procedure he has implemented and have nothing to do with the number of CSOs who retransmit the signal or the number of subscribers who receive it. For example, his sampling weight has a correlation of -0.07 with the number of distant subscribers who receive the signal (or the number of CSOs that retransmit the signal), implying that the two phenomenon are statistically unrelated. Indeed, a version of Dr. Gray's Table 1 that is unweighted looks very similar to Dr. Gray's own results in Table 1. See my Technical Appendix for details.

This flaw is highly consequential and not simply theoretical. As I noted in my original testimony, some distant signals are carried by many more cable systems than others. For example, during the period 2010-12, WGN was carried in 4,127 system-periods, whereas WIAT is carried in only 10 system-periods. See *Israel Testimony*, p. Appendix B-5.

See Analysis of Written Direct Testimony of Jeffrey S. Gray, Ph.D. by William E. Wecker, Ph.D. and R. Garrison Harvey, *In re Distribution of Cable Royalty Funds*, September 15, 2017 (hereinafter, *Wecker Testimony*), pp. 4-10.

Table 4: Comparison of Gray and Crawford Measures of Volume

_	2010-2013	2010-2013
Claimant Group	Gray	Crawford
Sports	0.6%	5.9%
Program Suppliers	48.3%	33.3%
CTV	14.4%	15.6%
PTV	27.8%	36.3%
Devotional	7.8%	2.3%
Canadian	1.1%	6.6%
Total	100.00%	100.00%

Source: Crawford Corrected Testimony, April 11, 2017, Figure 12.
Gray Corrected Amended Testimony, April 3, 2017, Table 1.

37. I also note that the Sports share of program minutes actually received by subscribers (volume) appears to be going *up* over time, indicating that if volume of minutes has any probative value for shares of the royalty fund, the Sports share is going up over time. A calculation similar to Dr. Crawford's was performed for the 2004-05 proceeding by Dr. Richard Ducey on behalf of CTV claimants.⁴² In Table 5, below, I compare the subscriber weighted shares of compensable minutes calculated in 2004-05 by Dr. Ducey to those calculated in 2010-13 by Dr. Crawford. I note that Sports share has increased slightly from 4.5 percent to 5.9 percent. However, Program Suppliers' share has decreased from 50.1 percent to 33.3 percent.

Testimony of Richard V. Ducey., *In re Distribution of Cable Royalty Funds*, June 1, 2009, (hereinafter, *Ducey Testimony*), Exhibit 8.

Table 5: Share of Compensable Minutes by Claimant Group Weighted by Subscribers

	2004-2005	2010-2013
Claimant Group	Ducey	Crawford
Sports	4.5%	5.9%
Program Suppliers	50.1%	33.3%
CTV	15.5%	15.6%
PTV	22.3%	36.3%
Devotional	2.7%	2.3%
Canadian	4.5%	6.6%
Total	100.00%	100.00%

Source: Crawford Corrected Testimony, April 11, 2017, Figure 12. Ducey Testimony, June 1, 2009, Exhibit 8.

38. My analysis of cable network program expenditures also shows that measures of volume do not translate directly into value. Below I reproduce Table V-5 from my December 22, 2016 testimony (see Table 6).⁴³ This analysis shows that despite the relatively small share of JSC programming hours transmitted (1.06 percent) by the top 25 cable networks during 2010-13, that programming nevertheless commanded more than 22 percent of the top 25 cable networks' 2010-13 programming budgets. Said another way, JSC programming is worth almost 30 times more per programming hour than non-JSC programming for the top 25 cable networks in 2010-13.

See *Israel Testimony*, pp. 25-26.

Table 6: Cable Content Analysis 2010-13, Summary of Top 25 Networks

Category	Total Programming Hours	Total HHVH (000)	Expeditures (\$M)	•	Expenditures per Hour of Viewing
				[D] =	[E] =
	[A]	[B]	[C]	[C] / [A]	[C] / [B]
JSC	9,274.0	15,164,368.9	\$12,524.7	\$1,350,513.0	\$0.826
Non-JSC	866,726.0	496,492,970.2	\$42,702.0	\$49,268.2	\$0.086
JSC / Non-JSC	0.01	0.03	0.29	27.41	9.60
JSC % of Total	1.06%	2.96%	22.68%		

Sources: Economics of Basic Cable 2015; various articles from Sports Media Watch, Sports Business Daily, ESPN Media Zone, TV By the Numbers, Soccer America, NY Times, USA Today, WSJ, Morgan Wick, and other various sources. See my underlying documents for a full list of sources.

39. Individual cable networks with a mix of JSC and other programming show a similar pattern. Below, I reproduce table V-6 from my December 22, 2016 testimony (see Table 7), an analysis of content expenditures for TBS and TNT. This analysis shows that JSC's relatively small share of Total Programming Hours on TBS (1.95%) and TNT (2.79%) translates into a 44.40 percent and 45.46 percent share, respectively, of the amount that the cable networks spent on programming. In other words, an hour of JSC programming commands more than 40 times the value of an hour of non-JSC programming on TBS, and nearly 30 times the value of non-JSC programming on TNT.

Table 7: Cable Content Analysis 2010-13, TBS & TNT

Network	Category	Total Programming Hours	Total HHVH (000)	Expeditures (\$M)	Expenditures per Hour of Programming	Expenditures per Hour of Viewing
					[D] =	[E] =
		[A]	[B]	[C]	[C] / [A]	[C] / [B]
TBS	JSC	684.0	1,220,722.6	\$1,031.0	\$1,507,370.6	\$0.845
	Non-JSC	34,356.0	20,880,757.4	\$1,291.2	\$37,581.7	\$0.062
	JSC / Non-JSC	0.02	0.06	0.80	40.11	13.66
	JSC % of Total	1.95%	5.52%	44.40%		
TNT	JSC	977.0	2,513,281.9	\$2,042.0	\$2,090,056.2	\$0.812
	Non-JSC	34,063.0	29,162,878.1	\$2,450.2	\$71,931.9	\$0.084
	JSC / Non-JSC	0.03	0.09	0.83	29.06	9.67
	JSC % of Total	2.79%	7.93%	45.46%		

Sources: Economics of Basic Cable 2015; various articles from Sports Media Watch, Sports Business Daily, ESPN Media Zone, TV By the Numbers, Soccer America, NY Times, USA Today, WSJ, Morgan Wick, and other various sources. See my underlying documents for a full list of sources.

40. In sum, simply correcting Dr. Gray's error of failing to account for how many CSOs retransmitted programming (and how many subscribers they have), significantly changes his results. Importantly, however, even with this change, one could not rely on the volume of minutes received by subscribers to determine relative valuations of the Agreed Categories without accounting for the differences in the value of each minute, a topic I discuss in greater depth in the next section in the context of viewership minutes.

2. Dr. Gray's analysis of program viewership provides no valid method for determining relative marketplace value

41. Dr. Gray also calculates the total amount of what he terms "viewing" of the Agreed Categories of programming on distant signals. In his Table 2, Dr. Gray calculates that live Sports programming constitutes roughly 2.1 to 4.8 percent of 2010-13 distant viewing.⁴⁴

See *Gray Corrected Amended Testimony*, pp. 19-20. See also Wecker Testimony, p. 27, and Written Rebuttal Testimony of Susan Nathan *In re Distribution of Cable Royalty Funds*, September 15, 2017 (hereinafter, *Nathan Rebuttal Testimony*), p. 3.

- 42. Dr. Gray's calculation of minutes viewed provides no reliable basis for determining the relative valuation of the Agreed Categories, most fundamentally because it treats all viewing minutes as the same and thus does not account for the fact that minutes of different types of programming have different values. Dr. Gray's assumption that minutes viewed can be treated equally in determining value is flawed for many reasons, most notably that it fails to consider the number of minutes of each type of content that is available. If the same number of minutes of all types of content were available, then the total amount of each that viewers choose to consume could indicate their relative value. But given the smaller number of available minutes of Sports programming, one cannot support such a conclusion. Many viewers may wish there were more Sports programming available, and choose to watch other programming only as a second choice because Sports programming is not available at certain times. In that context, a smaller number of minutes of Sports programming may be worth far more to viewers than a much greater number of other types of programming, which they value less but watch as a poor substitute when live Sports is not on.⁴⁵
- 43. A further problem with Dr. Gray's analysis of viewing minutes is that it ignores that it is CSOs (not viewers) that pay for programming, using such programming to fill out their channel lineups. Hence, the appropriate base for analysis of value is the number of minutes aired by CSOs (accounting for the proportion of its subscribers that receive the programming) such as I use in my regression analysis.
- 44. My regression methodology accounts for these issues by determining the difference in valuation across minutes of different types of programming and multiplying this by minutes aired by CSOs to determine relative values. Most notably, as described in my previous written testimony, my regressions show that a minute of Sports programming is more valuable than a minute of Program Suppliers programming. Below

As an analogy, consider that potatoes are much less expensive and more widely available than are blueberries. In 2013, U.S. consumers consumed over 33 pounds per person of fresh potatoes, compared with roughly one and a half pounds of fresh blueberries per person. But the price of blueberries (\$4.73) was roughly 8x greater than potatoes (\$0.56), per pound. Therefore, one cannot conclude that higher consumption equals higher value.

I reproduce Table V-2 from my testimony of December 22, 2016 (see Table 8).⁴⁶ It shows that an additional minute of Program Suppliers programming is much less valuable (\$0.469) than an additional minute of Sports programming (\$4.836). Hence, the fact that CSOs carry many more prorated distant signal minutes of Program Suppliers programming (51,261,616) than they do of Sports programming (6,962,722) cannot be used to infer that they place more value on Program Supplier programming than they do on Sports programming; an adjustment for the value of each type of content per minute is required, such as I provide in my analysis.

Table 8: Previous Israel Table V-2, Royalty Share Allocation

Claimant Group	Value of an Additional Minute ¹	System and Prorated DSE Weighted Compensable Minutes	Value of Minutes	Implied Share of Royalties
			[D] =	[E] =
[A]	[B]	[C]	[B] * [C]	[D] /(89,701,903)
Sports	4.836**	6,962,722	33,674,484	37.54%
Program Suppliers	0.469***	51,261,616	24,058,506	26.82%
Commercial TV	1.01***	19,677,607	19,873,956	22.16%
Public Broadcasting	0.66**	18,322,702	12,094,957	13.48%
Devotional	-0.701***	4,384,240	0	0.00%
Canadian	-0.973***	4,839,825	0	0.00%
Total		105,448,713	89,701,903	100.00%

Source: TMS/Gracenote; Cable Data Corporation; Kantar Media/SRDS

Notes: *, ***, and *** indicate results are significant at the 90, 95, and 99 percent confidence levels, respectively.

45. Returning to my analysis of cable network expenditures, it shows that measures of viewership also do not translate directly into value. Below I reproduce Table V-5 from my December 22, 2016 testimony (see Table 9).⁴⁷ This analysis shows that despite JSC's relatively small share of household viewing hours (HHVH, 2.96 percent) for the top 25 cable networks, JSC programming nevertheless commands more than 20 percent of the top 25 cable networks' programming budgets. Said another way, JSC programming is

¹ Minutes prorated.

See *Israel Testimony*, p. 20.

See *Israel Testimony*, pp. 25-26.

worth roughly 10 times more per household viewing hour than non-JSC programming for the top 25 cable networks.

Table 9: Cable Content Analysis 2010-13, Summary of Top 25 Networks

Category	Total Programming Hours	Total HHVH (000)	Expeditures (\$M)	Expenditures per Hour of Programming	Expenditures per Hour of Viewing
				[D] =	[E] =
	[A]	[B]	[C]	[C] / [A]	[C] / [B]
JSC	9,274.0	15,164,368.9	\$12,524.7	\$1,350,513.0	\$0.826
Non-JSC	866,726.0	496,492,970.2	\$42,702.0	\$49,268.2	\$0.086
JSC / Non-JSC	0.01	0.03	0.29	27.41	9.60
JSC % of Total	1.06%	2.96%	22.68%		

Sources: Economics of Basic Cable 2015; various articles from Sports Media Watch, Sports Business Daily, ESPN Media Zone, TV By the Numbers, Soccer America, NY Times, USA Today, WSJ, Morgan Wick, and other various sources. See my underlying documents for a full list of sources.

46. Focusing again on the individual cable channels, TBS and TNT, which show a mix of JSC and non-JSC programming, exhibit the same relationship between household viewing hours and value (See Table 10, below). Specifically, although JSC programming represents only 5.52 percent of HHVH on TBS and 7.93 percent of HHVH on TNT, that programming represents 44.40 percent and 45.46 percent of program expenditures, respectively. This means that the value of an hour of JSC viewing is worth roughly 13 times more than a viewing hour of non-JSC programming on TBS, and nearly 10 times more than a viewing hour of non-JSC programming on TNT.

Table 10: Cable Content Analysis 2010-13, TBS & TNT

Network	Category	Total Programming Hours	Total HHVH (000)	Expeditures (\$M)	Expenditures per Hour of Programming	Expenditures per Hour of Viewing
					[D] =	[E] =
		[A]	[B]	[C]	[C] / [A]	[C] / [B]
TBS	JSC	684.0	1,220,722.6	\$1,031.0	\$1,507,370.6	\$0.845
	Non-JSC	34,356.0	20,880,757.4	\$1,291.2	\$37,581.7	\$0.062
	JSC / Non-JSC	0.02	0.06	0.80	40.11	13.66
	JSC % of Total	1.95%	5.52%	44.40%		
TNT	JSC	977.0	2,513,281.9	\$2,042.0	\$2,090,056.2	\$0.812
	Non-JSC	34,063.0	29,162,878.1	\$2,450.2	\$71,931.9	\$0.084
	JSC / Non-JSC	0.03	0.09	0.83	29.06	9.67
	JSC % of Total	2.79%	7.93%	45.46%		

Sources: Economics of Basic Cable 2015; various articles from Sports Media Watch, Sports Business Daily, ESPN Media Zone, TV By the Numbers, Soccer America, NY Times, USA Today, WSJ, Morgan Wick, and other various sources. See my underlying documents for a full list of sources.

47. In sum, Dr. Gray is wrong to focus solely on volume and viewership to estimate relative marketplace value for the Agreed Categories. His measure of volume is simply incorrect and neither measure accounts for the obvious fact that not all minutes are equally valuable. Proper measures must account for the variation in value across minutes of different types, either by directly asking CSOs to report on the value of the programming (as the Bortz survey does), by using a regression analysis to determine value per minute which can then be multiplied by total minutes (as my first method does), or by relying on the values paid for Sports and non-Sports programming on cable channels (as my second method does).

D. DR. STECKEL'S TESTIMONY ON BEHALF OF PROGRAM SUPPLIERS IS NOT VALID ECONOMIC ANALYSIS

48. Dr. Steckel claims that CSO surveys, like those performed by Bortz on behalf of Sports programming and Mr. Horowitz on behalf of Program Suppliers, are not appropriate sources of information for the Judges to use in determining the relative

As does the regression analysis by Dr. Crawford for Commercial TV Claimants.

marketplace value of the Agreed Categories.⁴⁹ He offers several reasons for this opinion and, based on those reasons, he advocates for the use of market data or surveys of customers instead of CSO surveys.⁵⁰

49. Dr. Steckel is simply incorrect as a matter of economics. The most relevant source of information on the value of a product is the views of the buyers. Hence, in this case, the most relevant source of information on the value of distant signal programming is the views of CSO executives, who are the buyers of the programming and who make such programming decisions as part of their job. Therefore, the Bortz survey of CSOs should be the primary source of information for the Judges.⁵¹ This is especially true given that regression analyses using available marketplace data on distant signals corroborate the findings of the Bortz surveys, as do market data on cable network expenditures.

⁴⁹ Dr. Steckel's opinion in this proceeding is contradicted by much in the previous record, including the Judges themselves, various expert testimony (including my own), and the United States Court of Appeals for the District of Columbia Circuit. See for example: The Judges (Federal Register /Vol. 75, No. 180 / Friday, September 17, 2010. Page 57065. "Having carefully reviewed and considered all of the evidence in the record, the Judges find that the values of the program categories at issue among these contending claimants are most reasonably delineated by a range bounded by certain results indicated primarily by the Bortz constant sum survey"); expert testimony (e.g., Written Direct Testimony of Dr. Robert Crandall, 2004-05 Phase I (JSC Written Direct Statement Ex. No. 4), 1998-99 Phase I (JSC Written Direct Statement Ex. No. 6), 1989 Phase I (JSC Written Direct Statement Ex. No. 7); Written Direct Testimony of Michelle Connolly, Ph.D., In re Distribution of Cable Royalty Funds, December 22, 2016 (hereinafter, Connolly Testimony) (supporting Bortz survey and citing prior testimony of experts for CTV, PTV, Canadian and Devotional claimants supporting Bortz survey); and the D.C. Circuit (Program Suppliers v. Librarian of Congress, 409 F.3d 395, 402 (D.C. Cir. 2005), ("Nor did the CARP act unreasonably in declining to rely on Nielsen for direct evidence of viewing, as Bortz adequately measured the key criterion of relative market value. Moreover, as the CARP put it, Bortz 'subsumes inter alia all viewing data that a CSO might consider when assessing relative value of programming groups.").

Direct Testimony of Joel Steckel, Ph.D., *In re Distribution of Cable Royalty Funds*, December 22, 2016 (hereinafter, *Steckel Testimony*), pp. 7-8.

For ease of reference, when referring to CSO surveys for the purposes of responding to Dr. Steckel, I will refer to the Bortz surveys. See Section IV.F, below, which explains why my analysis supports the Bortz survey as superior to the Horowitz surveys.

- 1. In the relevant hypothetical market, the CSO is the buyer and thus the relevant focus of the survey
- 50. Dr. Steckel points to the Bortz surveys' reliance on CSO respondents to provide relative valuations for the Agreed Categories as a weakness of the survey. He believes that instead of the opinions of cable executives, one should focus on the opinions of subscribers. However, in both real world and the hypothetical free market for distant signals, the CSO is the buyer of the content. Hence, Dr. Steckel is wrong as a matter of economics: the relevant opinion on value is the opinion of the buyer, which is what the Bortz Survey captures.
- 51. In fact, the nature of distant signals is such that the value placed on the content by the CSO is the sole determinant of price for distant signals in a hypothetical free market. In general, as a matter of economics, the price for a product is determined by the marginal benefit to buyers and the marginal cost to sellers. In this case, however, the marginal cost to produce distant signals is zero in all cases, as the signals are simply retransmitted signals that have already been produced. Thus, the only variation in a hypothetical free market for distant signals would come from variation in the marginal benefit that CSOs would derive from retransmitting different distant signals. Therefore CSOs' valuation on distant signals is the relevant determinant of price in a hypothetical free market.
- Dr. Steckel's claim that subscriber surveys would be superior to CSO surveys is misguided. Arguing that one should survey cable subscribers instead of cable operators is to argue that one should not ask the actual buyers what they will pay, but rather the people whose valuations the operators are aggregating. This makes no economic sense. An analogy might be that instead of asking the parents how much they would pay for a vacation, you should survey all the family members (i.e. children) whose views the parents are aggregating in arriving at a willingness to pay for various vacation options. This method could not be as accurate as surveying parents directly, as the survey analyst would then have to decide how to aggregate the views of the various family members into an overall value, when what really matters is how the *parent*, who pays for the trip, would aggregate those values. Similarly, surveying subscribers would leave the analyst

to aggregate those values to make inferences about CSO valuation, when the relevant question is how the CSOs perform such aggregation, which can be answered by asking them directly.⁵²

- 53. In fact, Dr. Steckel ultimately agrees with this. He says "[i]f you want to know if customers will buy a product, ask them. If you want to know why customers are not buying a product, ask them. If you want to know what customers (*i.e.*, the market) value, ask them."⁵³ I agree with Dr. Steckel's reasoning, but the customers *are* the CSOs.
- Dr. Steckel also argues that "[i]f managers really understood what their customers value, every product would be a success. In fact, we know over half of new industrial products fail." This argument is entirely beside the point. The purpose of the Bortz survey is not to ask CSOs, as *suppliers*, about the value of new product, rather it is to ask CSOs as *buyers* what they would have spent, on a relative basis, for the Agreed Categories of programming, the relevant question in determining the valuation of those program categories. Dr. Steckel's argument would apply if Bortz were asking the network executives at the distant signal (e.g. WGN executives) how much they think their content is worth. In that case, Dr. Steckel would be correct that those executives may not know how much various content is worth to buyers. In contrast, the CSOs are the buyers of the distant signals. Therefore the CSOs should be the respondents to the survey valuing distant signal programming.

See also *Connolly Testimony*, pp. 18-19. On the point of CSOs as buyers, Dr. Connolly states: "Moreover, given that the respondents of the Bortz survey are internalizing their beliefs about subscriber preferences when responding to questions about the relative value of categories of programming, this aspect of the market is reflected in the Bortz survey." In addition, Dr. Connolly quotes Dr. Steven Wildman, who correctly concludes that "[b]ecause CSOs are the purchasers in the relevant marketplace and subscriber demands are filtered through them, the CSO survey results must be considered more primary and as more directly relevant to the determination of appropriate compensation than the subscriber surveys."

See Steckel Testimony, pp. 40-41.

See Steckel Testimony, p. 41.

2. CSO executives are experts in valuing content

- 55. Dr. Steckel believes that cable executives would be unable to respond accurately to the Bortz surveys, because they would give biased answers based on "intuition- and heuristics-based decision-making processes." In particular, he says that cable executives cannot be expected to value programming, because they "do not make decisions about individual programs or the various categories of programming employed in this proceeding. They make decisions about television stations and cable networks." This argument is incorrect.
- 56. The idea that cable executives do not think about underlying types of programming, but only think about networks as a whole, flies in the face of the realities of the cable television industry. In my own work, I interact with both cable executives and content providers regularly. Their discussions about what certain networks are worth – both how cable executives value them and how networks market themselves – are all about breaking down the value of the underlying content. One particularly salient example: as cable executives decide what TBS and TNT are worth, they are directly evaluating the individual value of the sports content, the original content, and the reruns. When they consider what HBO is worth, they consider "Game of Thrones", other new content, and movies. In fact, cable executives change their entire promotional strategy when "Game of Thrones" premieres on HBO, indicating that they are focused on the underlying shows, not the network generically. When they decide what to pay for an RSN, they value the Sports programming separately from the filler programming. Cable executives do have the expertise and experience to look across their networks and separately value content along the lines of the Agreed Categories; in fact, this is central to their day to day jobs.⁵⁷

See *Steckel Testimony*, pp. 21-22, 28-34.

See Steckel Testimony, p. 23.

See Written Rebuttal Testimony of Allan Singer, September 15, 2017, p. 11; Written Rebuttal Testimony of Daniel M. Hartman, September 15, 2017, p. 1-3, 16-18.

3. Dr. Steckel's discussion of marginal vs. total values is incorrect

- 57. Dr. Steckel argues that the Bortz survey captures only the "marginal return" (that is, the value created by one more minute of programming) of each category, whereas the marketplace value is captured by the "total return." This is simply incorrect. ⁵⁹
- 58. In fact, the Bortz survey asks respondents to focus on the non-network programming on the distant signals they carry, and then asks for the relative value of *each type of programming*, not the marginal value of one more minute of the programming. And then it clarifies that respondents should consider how they would divide up a fixed budget for "all the programming" broadcast on those distant signals. So this question is not asking how much extra they would spend for one additional minute or hour of the programming; it is asking how much they would spend for "all" of each category of programming. Hence this is exactly the right question: it is "marginal" only in the sense that it takes *other*, *network and cable* programming as given, but it then asks for the total value of the full bucket of minutes of each type of programming broadcast by the distant signals. In this way, it captures the total value of each category of distant signals not just the value of the last minute while correctly recognizing that these distant signals are being added to a lineup of other programming.
- 59. Marketplace behavior for other types of programming (e.g. cable networks) confirms that the Bortz survey asks the right question. For example, in my experience working with multiple CSOs, when they negotiate for a given cable network (or bundle of networks) from Disney for example they determine the price they are willing to pay by starting from a base of the other networks they carry and then asking how much additional profit they can make by adding the Disney networks, as a whole. And in doing

See *Steckel Testimony*, p. 26 ("any presumed equivalence between resource allocations and marketplace value rests on total return, not marginal return.")

Previous testimony on this topic directly contradicts Dr. Steckel. See Testimony of Robert W. Crandall, Ph.D., (JSC Written Direct Statement Ex. 7), pp. 9-14. ("It is this latter measure of value – the total value as represented by the area under the demand curves – that is captured by the Bortz survey.")

See *Bortz Report*, pp. B-5 & B-6, questions 4a and 4b.

so, they consider the value of the various categories of programming (sports on ESPN, animation, etc.) that come with the Disney networks, again as a whole. This process, carried out by each CSO, determines the overall marketplace value of the content across all CSOs. And it's exactly the process that the Bortz survey mimics, by asking how much CSOs would allocate to each category of distant signal programming, in total.

4. CSO management of multiple systems does not invalidate the Bortz Survey results

60. Dr. Steckel also argues that the fact that many survey respondents manage multiple cable systems would introduce ambiguity and bias into the survey results. ⁶¹ However, this concern is without basis. First, it ignores that the Bortz survey asks very system specific questions about the precise distant signals carried on each system during the relevant period, so confusion should not be an issue. ⁶² And, even where an executive was the respondent for more than one system, in the Bortz survey a separate questionnaire was administered for each system. ⁶³ Second, cable executives are generally responsible for a *large and changing* number of systems and thus must determine the value of content on the various systems as part of their day to day job. Hence, Dr. Steckel is once again asserting that cable executives are not qualified to answer questions at the heart of their responsibilities, an unreasonable assertion for which he provides no support.

See Steckel Testimony, pp 25-26.

See for example, *Bortz Report*, p. B-3, question 2a. "Industry data indicate that your system serving (ENTER COMMUNITY LISTED ABOVE; i.e., primary community from SOA) and nearby communities carried the following broadcast stations from other cities in 2010", after which the survey administrator reads off individual distant signal channels by call letters.

Trautman Rebuttal Testimony, p. 43 n.29. In contrast, in the Horowitz survey when an executive was the respondent for more than one system, "he/she was only asked to respond to one survey for all the systems with the same channels." Corrected Testimony of Howard Horowitz, *In re Distribution of Cable Royalty Funds*, April 25, 2017 (hereinafter, *Horowitz Corrected Testimony*), p. 8.

5. Analysis of marketplace data corroborates the Bortz surveys

61. Finally, even if one were to accept any of Dr. Steckel's criticisms, and thus question the accuracy of survey results, the appropriate next step would be to make sure those results are corroborated by actual marketplace evidence. Indeed, Dr. Steckel appears to agree with this approach: He states his preference for the analysis of "market results" and data on "transactions," as opposed to surveys. In this case, actual market result and data on transactions *corroborate* the Bortz survey results. In particular, as explained above, my regression results (as well as Dr. Crawford's) and my analysis of cable network expenditures corroborate the Bortz surveys' findings. Therefore, even if one takes Dr. Steckel's recommendation and relies on actual marketplace data, the Bortz survey results are simply bolstered.

E. MR. MANSELL'S TESTIMONY ON BEHALF OF PROGRAM SUPPLIERS MISINTERPRETS THE IMPLICATIONS OF THE RAPIDLY GROWING SOURCES OF CONTENT

- 62. Mr. Mansell concludes "that over the past 30 years, the number of live professional and college team sports games on local over-the-air TV stations has significantly declined." In support of this opinion, Mr. Mansell offers a limited history of Sports broadcasting, describing the expansion of Sports programming to cable, the internet and mobile devices.
- 63. Mr. Mansell's analysis is flawed in at least two fundamental ways. **First**, in his brief summary of this history of Sports programming, Mr. Mansell skips over the most relevant point: Even as the sources of supply of Sports content have expanded, its value (overall and per minute) has remained high. Indeed, Mr. Mansell's own testimony shows the continued value and desirability of Sports programming, as he refers to bidding wars for the Sports programming that has migrated from broadcast networks to RSNs and

See Steckel Testimony, p. 39.

Corrected Testimony of John Mansell, *In re Distribution of Cable Royalty Funds*, March 9, 2017 (hereinafter, *Mansell Corrected Testimony*), p. 4.

national broadcasts, ⁶⁶ and he affirmatively demonstrates that Sports programming is valuable. ⁶⁷

- 64. Because it ignores the ongoing high value of sports content, Mr. Mansell's analysis is ultimately irrelevant. The statistical and survey methodologies used by myself, Dr. Crawford, and Bortz compute the value of the various categories of programming *given whatever changes have occurred in the marketplace*. For example, my analysis uses data on actual minutes of distant signal content during the relevant period, as well as data on royalties paid by CSOs during the same period, to estimate how CSOs valued the broadcasts according to their Agreed Categories. More generally, to the extent there have been changes in the availability of sports content (or Program Suppler content) from various sources, the data during the relevant time period speak for themselves on the effect of the changes. Put simply, the results of the Bortz surveys, my analysis, and Dr. Crawford's analysis answer the question of value, *reflecting the effect of all industry trends*, whether those discussed by Mr. Mansell or others.⁶⁸
- 65. Moreover, available data show that Mr. Mansell's conclusion is wrong as a matter of fact, as it pertains to distant signal retransmissions during 2010-13. While Mr. Mansell may be correct that there has been a gradual migration of Sports programming to cable channels and other outlets over the past thirty years, for the comparatively shorter time period between 2004-05 and 2010-13, the relative amount of compensable Sports programming retransmitted on distant signals actually increased. Below I reproduce as Table 11 an analysis that I performed above, comparing compensable minutes by

See *Mansell Corrected Testimony*, p. 10.

See *Mansell Corrected Testimony*, p. 36.

The Judges reached the same conclusion in the 2004-05 proceeding. See Federal Register /Vol. 75, No. 180 / Friday, September 17, 2010. Page 57070 n.18. ("Various arguments are made by some parties concerning whether or not the Judges must consider or require proof of changed circumstances, separate and apart from the estimates of relative value presented by the parties. We find, as did the 1998–99 CARP, that changed circumstances are embedded within the methodologies that provide reliable estimates of relative valuations and, therefore, have already been accounted for and are subsumed within the calculus of results. See 1998–99 CARP Report at 16, 31–2.")

claimant group in 2004-05 as compared with 2010-13. ⁶⁹ As this table shows, the percentage of Sports minutes increased slightly from 4.5 percent in 2004-05 to 5.9 percent in 2010-13. Therefore, at least as it affects distant signal retransmission in the recent past, Mr. Mansell's implication that the quantity of Sports programming has declined is incorrect.

Table 11: Share of Compensable Minutes by Claimant Group Weighted by Subscribers

	2004-2005	2010-2013
Claimant Group	Ducey	Crawford
Sports	4.5%	5.9%
Program Suppliers	50.1%	33.3%
CTV	15.5%	15.6%
PTV	22.3%	36.3%
Devotional	2.7%	2.3%
Canadian	4.5%	6.6%
Total	100.00%	100.00%

Source: Crawford Corrected Testimony, April 11, 2017, Figure 12. Ducey Testimony, June 1, 2009, Exhibit 8.

66. **Second**, Mr. Mansell's analysis overlooks the broader implications of the rapidly evolving media environment, which have had a disproportionately negative impact on the value of other categories of programming, and in particular Program Suppliers, while the value of Sports programming has been remained high. Contrary to Mr. Mansell's conclusions, the industry recognizes that the category of programming that has primarily lost value due to the explosion of content is not live Sports but rather Program Supplier content. This has occurred because the relevant period saw the explosion of Subscription Video On-Demand (SVOD) services like Netflix, Hulu and Amazon, and a general explosion in available content similar to that offered by Program Suppliers.

See Table 5, above.

http://variety.com/2016/tv/news/peak-tv-2016-scripted-tv-programs-1201944237/.

During 2010-13, the number of basic cable original scripted shows more than doubled.

These statistics only account for the number of new shows, and does not account for the explosion of previously viewed content throughout cable, cable on-demand, and SVOD services.

Indeed, by the end of 2013, Netflix had more than 30 million U.S. subscribers,⁷¹ and by the third quarter of 2013, Netflix was streaming about 5 billion hours of video globally, virtually all of it Program Suppliers programming.⁷² The explosion of content has thus particularly affected Program Supplier content.⁷³ Indeed, accepted wisdom today is that the traditional, linear TV model (on which distant signals air) is more dependent on Sports than ever.⁷⁴

F. MY REGRESSION ANALYSIS DOES NOT CORROBORATE THE FINDINGS OF THE HOROWITZ SURVEYS PERFORMED ON BEHALF OF PROGRAM SUPPLIERS

67. The 2010-13 Horowitz surveys (Horowitz surveys) were developed by Howard Horowitz with the intention of replicating the "methods and procedures of the Bortz Survey that was done for the 2005 royalty year" but with certain modifications. As one example, particularly relevant to my regression analysis, Mr. Horowitz adds a new category to his survey method: "Other sports," meant to specify non-team sports programming such as horse racing and figure skating, which is not attributable to Joint Sports Claimants, but rather is attributable to Program Suppliers. ⁷⁶

https://www.nytimes.com/2014/01/23/business/media/growth-of-netflix-subscribers-surpasses-analysts-expectations.html

http://variety.com/2014/digital/news/netflix-to-focus-on-adding-higher-rated-and-exclusive-titles-cfo-says-1201187028/

http://articles.latimes.com/print/2012/sep/30/entertainment/la-et-st-homeland-market-20121001. Viewership for individual scripted shows had decreased drastically by the relevant time period.

http://variety.com/2013/tv/news/sports-fans-to-spend-more-money-to-watch-favorite-teams-1200577215/. "The price of TV broadcast rights for sports in the age of time-shifted viewing has soared. After all, it's high-demand content that viewers don't DVR. And unlike other video entertainment, it's not available from Netflix or other Internet services." See also https://www.digitaltrends.com/social-media/facebook-and-twitter-are-trying-to-acquire-rights-to-stream-live-tv-content/, which show that providers like Facebook and Twitter are competing to broadcast Sports games, but are not generally interested in "conventional TV programs."

⁷⁵ *Horowitz Corrected Testimony*, p. 3.

See *Horowitz Corrected Testimony*, p. 5.

- 68. My regression results, as well as those of Dr. Crawford corroborate the Bortz survey results and fail to corroborate the Horowitz survey results. Hence, actual marketplace evidence supports use of the Bortz survey, not the Horowitz survey, and rejects Mr. Horowitz's claim that not including a separate "Other Sports" category invalidates the Bortz results.
- 69. Table 11, below, presents a comparison of the results of the Horowitz and Bortz surveys with the results of my regression analysis and Dr. Crawford's regression analysis. As the Table shows, while the Bortz survey matches the regression results well, the Horowitz surveys fail to match the regression results, particularly for the most important, high value categories. The Bortz surveys, my regression analysis and the Crawford regression analysis all imply the same rank order for the top 4 categories: Sports, Program Suppliers, CTV and PTV, in that order. The Horowitz surveys, in contrast, rank these categories as: Program Suppliers, Sports, PTV and CTV, thus failing to match the regression results.
- 70. It is also notable that the Bortz surveys, my regression analysis, and the Crawford regression analysis all value Sports within roughly 3 percentage points of each other, while the Horowitz valuation (30.0 percent) is 5 percentage points below the lowest, and 8 percentage points below the highest valuation from the other studies. For Program Suppliers, the Horowitz surveys (39.0 percent) are 8 percentage points above the highest of the three analyses, and 12 percentage points above the lowest, whereas Bortz, Israel and Crawford are within roughly 4 percentage points of each other.

For ease of comparison, I present a royalty-weighted average of the Horowitz survey results. Indeed on a year-by-year basis, some of the Horowitz survey results are even more extreme than this average. See *Horowitz Corrected Testimony*, p. 16, Table 3.2.

Table 12: Comparison of Bortz, Israel, Crawford and Horowitz Results

	Implied Share of Royalties						
Claimant Group	Israel	Crawford	Bortz	Horowitz average			
Sports	37.5%	35.1%	38.2%	30.0%			
Program Suppliers	26.8%	23.4%	31.0%	39.0%			
CTV	22.2%	19.5%	20.6%	12.6%			
PTV	13.5%	17.0%	5.1%	13.2%			
Devotional	0.0%	0.7%	4.6%	4.7%			
Canadian	0.0%	4.2%	0.5%	0.6%			
Total	100.0%	100.0%	100.0%	100.0%			

Source: Israel Testimony, December 22, 2016, Table V-2;

Crawford Corrected Testimony, April 11, 2017, Figure 20.

Bortz Testimony, December 22, 2016, Table I-1. Horowitz Testimony, December 22, 2016, Table 3.2

Notes: Israel analysis spans 2010-2012;

Crawford analysis spans 2010-2013; Bortz analysis spans 2010-2013. Horowitz analysis spans 2010-2013.

- 71. The failure of the Horowitz survey to match actual marketplace evidence, as reflected in the regression results, is not surprising given the flaws in the Horowitz survey laid out by Mr. Trautman and Dr. Mathiowetz in their testimony. In particular, the anomalously high value accorded to Program Suppliers in the Horowitz surveys supports Mr. Trautman's conclusion that the Horowitz surveys tend to bias respondents to overvalue Program Suppliers programming.
- 72. Finally, I note the fact that my regression analysis, as well as Dr. Crawford's, correctly allocates the minutes in Mr. Horowitz's "Other Sports" category into the appropriate Agreed Categories (including attributing any program that would be included in Mr. Horowitz's "Other Sports" category to Program Suppliers), and yet still closely matches the values found in the Bortz survey, refutes Mr. Horowitz's claim that the Bortz

See *Trautman Rebuttal Testimony*, pp. 12-28; *Mathiowetz Rebuttal Testimony*, pp. 15-27.

survey is somehow invalidated by not accounting for the Other Sports minutes correctly.⁷⁹

- G. DR. GEORGE'S TESTIMONY ON BEHALF OF CANADIAN CLAIMANTS IS FLAWED, AND A CORRECTED ANALYSIS SHOWS LOWER VALUATIONS FOR CANADIAN PROGRAMMING
- 73. Dr. George performs a regression analysis that "shares many features of the regression model presented by Dr. Joel Waldfogel in the 2004-05 proceeding," but which she says is "modified to focus more precisely on the value of Canadian Claimant programming." She concludes that the value of an additional minute of Canadian programming is worth roughly \$0.089 within the "Canadian region" of cable operators, and estimates that Canadian Claimants should receive approximately 7.11 percent of the royalty fund. St
- 74. Importantly, in reaching her conclusions, Dr. George simultaneously makes two main modifications to the Waldfogel methodology, without indicating which drives her results:
 - First, for her regression analysis, she limits her sample to those cable systems which reside in what she calls the "Canadian region." Using this sample, she estimates an implied share of the royalty fund for Canadian Claimants for those

See *Horowitz Corrected Testimony*, p. 5.

Written Direct Statement of Lisa M. George, *In re Distribution of Cable Royalty Funds*, December 15, 2016 (hereinafter, *George Testimony*), p. 1. Dr. George amended her testimony on March 8, 2017 (hereinafter, *George Amended Testimony*), and then issued corrections to both the *George Testimony* and the *George Amended Testimony* on May 17, 2017 (hereinafter, *George Corrected Amended Testimony and George Corrected Testimony*).

George Corrected Amended Testimony, Amended Table 3, p. 6. Dr. George expresses the value of an additional minute of Canadian programming in thousands, at \$88.88 per 1,000 minutes.

Dr. George defines the Canadian region to include both systems that are in the "Canadian Zone" (i.e., the geographic area within which CSOs are permitted to retransmit Canadian signals under the statutory license) and systems "absorbed into the zone through merger." *George Corrected Amended Testimony*, p. 1.

cable systems, and then prorates that share to account for cable systems outside the Canadian region.⁸³

- Second, for her programming data, she only separately categorizes programming that appears on Canadian distant signals and lumps all other programming into a single category called "Compensable Minutes on US Distant Signals".⁸⁴
- 75. Dr. George focuses her discussion on her choice to limit her sample to only those cable systems that are able to carry Canadian signals, but this is not actually what drives her results. Instead what drives those results for Canadian Claimants is her decision to lump the vast majority of programming into a single "Compensable Minutes on US Distant Signals" category. If one instead properly accounts for the specific programming category into which each minute falls, then even when only considering cable systems in the Canadian region, one finds a royalty share for Canadian Programming that is in line with the results of the Bortz surveys. Hence, Dr. George's higher Canadian share is driven by *only* separately counting minutes on Canadian signals (which is the only source of Canadian minutes), while using a much noisier measure of minutes in other categories. That is, her results are driven by many important variables on the number of minutes by each other category, thus subjecting her regression to omitted variable bias, not by limiting analysis to the "Canadian region."
- 76. In addition to correcting Dr. George's regression analysis, I have also corrected her calculation for estimating the share of royalties to conform more closely to Dr.

⁸³ George Corrected Testimony, p. 22.

George Corrected Testimony, p. 21.

In Appendix C to my testimony, I estimated a model with only two variables concerning the Agreed Categories: 1) Sports programming and 2) Non-Sports programming. As I said in my testimony, by focusing on the result of Sports programming, this "model sensitivity is intended to test whether the value for Sports minutes is sensitive to splitting out the individual programming categories." My key conclusion was that my finding of high Sports value *was not* affected by this alternative categorization, meaning that it was robust to such change in categories. Hence this finding was the opposite of Dr. George's result, which holds *only if* the programming categories are collapsed and does not hold in a more complete model.

Waldfogel's original method, listed in this table as "Corrected Canadian Royalty Share". Dr. George includes negative coefficient values, such as her estimate for Program Suppliers programming on Canadian signals, in her calculation, rather than setting them to zero, which distorts the royalty shares for categories with positive coefficients. I also remove the weighting scheme that Dr. George used in her calculation, which weighted results by the number of subscribers at each CSO. The Waldfogel-type regression method estimates the royalties per CSO, not the royalties per subscriber, as a function of the CSO's distant signal programming and various control variables. Weighting the total CSO minutes by subscriber is therefore not an appropriate use of the output of this regression, because the functional form of the regression assumes that royalties are measured per CSO, not per subscriber. As a result of these changes to Dr. George's royalty share calculation, even using Dr. George's own regression results yields only a 3.95 percent share of the total royalty pool for Canadian programming.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 14, 2017.

Mark A Israe

TECHNICAL APPENDIX

V. TECHNICAL APPENDIX: THE DETAILS OF DR. GEORGE'S REGRESSION ANALYSIS

- 1. Table 13, below, compares:
 - 1) Dr. George's original base regression results
 - 2) Dr. George's regression, breaking out all Agreed Categories (by using the measure of minutes from the data used in my regression). 86

As I only have programming data categorized for 2010-12, this sample excludes the year 2013. Full regression results and implied royalty share calculations for all Agreed Categories are provided in my underlying documents.

Table 13: Regression Models Concerning the Canadian Region

	(1)	(2)
	George Base Model (2010-2013)	George Model with Individual Programming Categories (2010-2012)
Corrected Canadian Royalty Share	3.95%	1.48%
Dr. George's Calculation of Canadian Royalty Share	7.11%	2.25%
Minutes of Canadian Programming		0.371** (0.148)
Minutes of Commercial TV Programming		1.100*** (0.384)
Minutes of Devotional Programming		0.141 (0.338)
Minutes of Program Suppliers Programming		0.0227 (0.150)
Minutes of Public Broadcasting Programming		1.553*** (0.291)
Minutes of Sports Programming		7.633** (3.527)
Minutes of Other Programming		1.634*** (0.586)
Minutes of Network Programming		1.132*** (0.429)
Distant Canadian Signals - Wtd. Canadian Minutes (1,000)	88.88*** (32.92)	
Distant Canadian Signals - Wtd. Sports Minutes (1,000)	906.8 (774.1)	
Distant Canadian Signals - Wtd. Program Supplier Minutes (1,000)	-293.8** (121.0)	
Distant Domestic Signals - Wtd. Total Minutes (1,000)	44.09*** (5.294)	
Observations	2,198	1,657
R-squared	0.861	0.854

Robust standard errors in parentheses

2. As column (2) of Table 13 shows, estimating Dr. George's model with controls for all programming categories (thus avoiding omitted variable bias)—but still limiting analysis only to CSOs from the Canadian region—yields an estimate for Canadian programming of roughly 1.48 percent of the total royalty fund. This result is much

^{***} p<0.01, ** p<0.05, * p<0.1

smaller than Dr. George's own finding of 7.11 percent for Canadian programming's royalty share, and much closer to the Bortz surveys' estimate of 0.5 percent.

3. As seen in the second column of Table 13, the values on many other categories of programming are quite different from my base model when restricted to the Canadian region. This is, however, in no way a refutation of my base results, which correctly reflect the full set of CSOs. Finding different results when restricting only to a small, non-randomly selected set of CSOs is not surprising, but is also irrelevant to the question of the appropriate values, reflecting the full set of CSOs.

VI. TECHNICAL APPENDIX: DR. GRAY'S TABLE 1

4. Table 14, below, compares the results of Dr. Gray's Table 1 to the results of his analysis but without the use of his sampling weights. The results for JSC programming in particular are very similar between the two versions.

Table 14: Comparison of Weighted and Unweighted Gray Table 1 Results

	Share of All Retransmissions							
	Original Gray Table 1			Uı	nweighted	Gray Tabl	e 1	
	2010	2011	2012	2013	2010	2011	2012	2013
Canadian Claimants	0.5%	1.4%	1.5%	0.8%	3.4%	4.0%	6.3%	5.8%
Commercial Television	11.7%	10.2%	14.6%	14.4%	11.5%	11.0%	12.2%	10.7%
Devotionals	7.8%	12.1%	5.4%	6.9%	5.2%	4.7%	2.3%	2.8%
Program Suppliers	55.4%	54.0%	38.3%	50.7%	45.5%	43.7%	34.2%	37.3%
Public Television	24.5%	22.1%	40.1%	26.9%	34.2%	36.4%	44.9%	43.3%
JSC	0.2%	0.2%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%

Share of All Volume

	Original Gray Table 1			. Ui	nweighted	Gray Tabl	e 1	
	2010	2011	2012	2013	2010	2011	2012	2013
Canadian Claimants	0.5%	1.8%	1.3%	0.8%	3.2%	4.0%	5.9%	5.5%
Commercial Television	12.8%	11.8%	18.5%	14.2%	12.8%	12.5%	14.6%	11.2%
Devotionals	8.2%	11.5%	5.3%	6.4%	5.2%	4.5%	2.3%	3.0%
Program Suppliers	53.5%	52.1%	35.8%	52.1%	43.6%	41.2%	31.5%	36.1%
Public Television	24.4%	22.1%	38.6%	25.8%	34.6%	37.2%	45.3%	43.7%
JSC	0.7%	0.7%	0.5%	0.7%	0.6%	0.6%	0.4%	0.5%

Source: Gray Corrected Table 1 and Backup Materials

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

)
In re)
)
DISTRIBUTION OF CABLE) NO. 14-CRB-0010-CD (2010-13)
ROYALTY FUNDS)
)

Written Direct Testimony of Nancy A. Mathiowetz, Ph.D.

December 22, 2016

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I. Qualifications

- 1. I am Professor Emerita, Department of Sociology at the University of Wisconsin-Milwaukee (UWM). Prior to joining the faculty at UWM in 2003, I was Associate Professor, Joint Program in Survey Methodology, University of Maryland and University of Michigan. I received a B.S. from the University of Wisconsin and a M.S. (Biostatistics) and Ph.D. (Sociology) from the University of Michigan. I served as co-Editor, *Public Opinion Quarterly* from 2008-2012 and as President, American Association for Public Opinion Research (AAPOR) from 2007-2008. In 2015 I was awarded the AAPOR Award for Exceptional Distinguished Achievement. Between 1998 and 2004, I was an associate editor of the Journal of Official Statistics and I have served as a reviewer for numerous other journals and publications. I am an elected Fellow, American Statistical Association. In recent years I have served as an advisor to the U.S. Energy Information Agency, the California Health Interview Survey, and the U.S. Bureau of Labor Statistics, as a member of technical panels of the National Academy of Sciences as well as a reviewer for the National Science Foundation and the National Institutes of Health, all with respect to my area of expertise, survey methodology. I have testified as an expert on survey research methodology in federal and state court cases.
- 2. My research focuses on various aspects of survey methodology, including, but not limited to, the effects of mode and methods of data collection, question and questionnaire design, response error, and means to assess and reduce various sources of error in the survey process. I have taught courses on survey

methodology, questionnaire design, and advanced statistical methods and have offered short courses on questionnaire design to various audiences. My curriculum vitae, which outlines my professional experience as well as my publications, is included as Appendix A.

II. Introduction and Summary

- 3. The Joint Sports Claimants (JSC) have asked that I review the 2010-13 cable operator surveys conducted by Bortz Media and Sports Group, Inc. (Bortz) and render my opinion on the methodology used to conduct the surveys. Bortz describes that methodology in a report entitled "Cable Operator Valuation of Distant Signal Non-Network Programming: 2010-13" (Bortz Report).
- 4. My review of the Bortz Report leads me to conclude that the 2010-13 Bortz Surveys provide a valid and reliable assessment of the relative market value of the different categories of distant signal programming that cable systems carried during the years 2010-13.

III. Background

5. The Copyright Office has explained that:

Section 111 of the Copyright Act of 1976, title 17 of the United States Code, established a compulsory licensing system under which cable systems may make secondary transmissions of copyrighted works. The license prescribes various conditions under which cable systems may obtain a compulsory license to retransmit copyrighted works [on broadcast television stations], including the filing of statements of account forms. It also establishes the requirements governing the form, and content of the filing of these semi-annual statements and submission of statutory royalty payments [http://www.copyright.gov/licensing/sec 111.html].

Royalties collected from cable system operators are distributed to the copyright owners of the programs on distant broadcast signals (claimants) via a process overseen by the Copyright Royalty Judges (CRJs). For the distribution of the 2010-2013 cable royalty funds, the agreed categories of claimants are the Canadian Claimants, Commercial Television Claimants, Devotional Claimants, Joint Sports Claimants, Music Claimants, National Public Radio, Program Suppliers, and Public Television Claimants (*Notice Of Participant Groups, Commencement Of Voluntary Negotiation Period (Allocation), And Scheduling Order*, Docket No. 14-CRB-0010-CD (2010-13), Nov. 25, 2015).¹

6. Cable system operators retransmit distant broadcast signals in their entirety under the Section 111 compulsory license. As a result, it is impossible to directly observe the market value of any one category of programming on those distant signals. For example, the distant signal being retransmitted may include sports programming, syndicated television shows, as well as locally produced shows, all for a given royalty set by law.

7. As the CRIs have observed:

All parties acknowledge that Congress did not set forth a statutory standard for cable royalty allocations...[F]or purposes of this proceeding, the parties are all in agreement that the sole governing

¹ The CRJs have observed that the Music Claimants category differs from the others because it "permeates all other program categories," and accordingly the CRJs took a share for Music "off the top" before allocating the royalties among the other program categories (Federal Register, Vol. 75, No. 180, p. 57075). National Public Radio also is unique because its claim is not for television programming but rather is for radio broadcasts.

standard is the relative marketplace value of the distant broadcast signal programming retransmitted by cable systems during 2004 and 2005 (Federal Register, Vol. 75, No. 180, September 17, 2010, p. 57065).

Although there are different approaches to determining relative marketplace value, Bortz has used a constant sum survey of cable operators since 1983 to determine the relative value of different categories of distant signal programming retransmitted by cable systems pursuant to the Section 111 license. The history of Bortz's use of the constant sum methodology is outlined in Appendix A of the Bortz Report. Several market research and survey experts have offered testimony concerning the methodology of the Bortz surveys in prior royalty distribution proceedings.²

8. In their allocation of cable royalty funds for 2004-2005, the CRJs found that "the values of the program categories at issue among these contending claimants are most reasonably delineated by a range bounded by certain results indicated primarily by the Bortz constant sum survey" Federal Register, Vol. 75, No. 180, p. 57065. Similarly, in *Report of the Copyright Arbitration Royalty Panel to the Librarian of Congress* (2003), concerning the distribution of 1998 and 1999 cable royalty funds, the Copyright Royalty Arbitration Panel (CARP) noted:

In conclusion, the Panel accepts the Bortz survey as an extremely robust (powerfully and reliably predictive) model for determining relative value for PS, JSC, and NAB-for both the Basic Fund and the

² I have reviewed the written direct testimony of Gregory Duncan (2004-2005 Proceeding), Joel Axelrod (1990-92 Proceeding), Leonard Reid (1989 Proceeding), and Samuel H. Book (1989 Proceeding), who supported Bortz, and the written direct testimony of Alan Rubin (1983, 1989, 2004-05 Proceedings), who criticized Bortz.

3.75% Fund. Indeed, for reasons discussed *infra*, we find that the Bortz survey is more reliable than any other methodology presented in this proceeding for determining the relative marketplace value of these three claimant groups (p. 31).

IV. Analysis of the 2010-13 Bortz Surveys

9. The Federal Judicial Center and National Academy of Sciences have published "The Reference Guide on Survey Research" (Diamond, 2011)—one of the chapters of the *Reference Manual on Scientific Evidence*. The purpose of this Reference Guide is to assist courts in evaluating the quality of a survey. I will use this Reference Guide as a framework for reviewing the methodology of the 2010-13 Bortz Surveys³.

A. Purpose and Design of Survey

- 10. Diamond (2011) begins by focusing on issues related to the purpose and design of the survey. She poses the following questions:
 - Was the survey designed to address relevant questions?
 - Was participation in the design, administration, and interpretation of the survey appropriately controlled to ensure the objectivity of the survey?
 - Are the experts who designed, conducted, or analyzed the survey appropriately skilled and experienced?
- 11. I believe that the 2010-13 Bortz surveys are designed to address the relevant question of interest, specifically, the relative value associated with specific categories of distant signal programs. The surveys continue (and improve upon) previous surveys conducted by Bortz and relied on by the CRJs and their predecessors in rendering decisions concerning copyright royalty distributions. The

³ I note that not all of the questions posed in the Reference Guide are relevant to the design and administration of the Bortz surveys; only those questions identified by Diamond (2011) that are relevant to the present discussion are included in my opinion.

fact that previous versions of a similar questionnaire and approach were used by the CRJs in their royalty distributions supports both the validity and the relevance of the methodology and, specifically, Question 4 concerning relative program values.

- 12. The questions used in the 2010-13 Bortz Surveys are clear and objective and relevant to the issue at hand. Interviewers and respondents were blinded to the use of the data, reducing bias that may be related to knowledge of the survey sponsor or related to the use of the data.
- 13. For over thirty years, Bortz has been engaged in the design and analysis of surveys presented to the CRJs and their predecessors. In addition, the data collection organization retained by Bortz, THA Research, provides market research to the cable and television industry and has extensive research experience interviewing executives. In my opinion, both the designers of the survey and the members of the data collection organization are appropriately skilled and experienced.

B. Population Definition and Sampling

- 14. Diamond continues in her outline, focusing on issues related to population definitions and sampling with the following three questions:
 - Was an appropriate universe or population identified?
 - Did the sampling frame approximate the population?
 - Does the sample approximate the relevant characteristics of the population?
- 15. The focus of the 2010-13 Bortz Surveys was "Form 3" cable systems. Form 3 operators are those cable systems that had at least \$527,600 in semi-annual "gross"

receipts" from retransmissions (see Bortz Report, p. 10). Although focusing on "Form 3" cable systems excludes Form 1 and 2 systems, as noted by Bortz, Form 3 systems account for more than 98 percent of total royalty payments, according to the Cable Data Corporation.⁴ With coverage of over 98% of the royalty payment universe, "Form 3" systems are the appropriate population elements on which to focus.

- 16. The sampling frame –that is, the universe of interest –was comprised of statements of account filed by cable systems with the Copyright Office for the first accounting period of each survey year (Bortz Report, p. 11). This set of records used as the sampling frame for the survey mirrors the population of interest.
- 17. The cable operator survey utilized a stratified random sample of "Form 3" cable system operators. Copyright royalty payments were used as the classification variable for stratification of the sample. Specifically, for each year 2010-2013, the cable systems were divided into four strata, based on royalty class. The use of a stratified sample results in an efficient sample that assures that the resulting sample mirrors the population of interest (as compared to a simple random sample). In addition, a stratified sample leads to more efficient standard errors (margins of error) around the resulting estimates (once again, in comparison to a simple random sample).

⁴ Bortz also notes that it would not be feasible to include Form 1 and 2 systems in the survey because they file simpler accounting statements that do not specifically identify the distant signals carried on those systems (see Bortz, p. 10).

18. As outlined by Bortz (pp. 11-12), the sample for each of the four years, 2010-2013, consisted of four strata with disproportionate sampling so as to most efficiently maximize representation of those cable system operators who account for the largest royalty payments. In my opinion, the resulting sample fully reflects the population of interest.

C. Survey Implementation

- 19. Diamond (2011) follows the questions concerning the sample design with ones that address implementation:
 - What is the evidence that nonresponse did not bias the results of the survey?
 - What procedures were used to reduce the likelihood of a biased sample?
 - What precautions were taken to ensure that only qualified respondents were included in the survey?
- 20. The survey of cable systems operators was conducted as a telephone interview with the person most responsible for programming decisions serving as the respondent. Overall, the survey achieved high response rates, ranging from 51.8% to 56.6% for the four years. These are considered high response rates; it is not uncommon for high quality telephone surveys conducted by organizations such as the Pew Research Center to achieve response rates in only the 10% to 20% range.
- 21. The number of completed interviews per year ranged from 160 to 170 and represents between 28 and 40 percent of royalties paid for the respective years (Bortz Report, p. 21). The number of completed interviews provides a reliable base for estimation for each of the years.

- 22. Nonresponse bias is a function of both the nonresponse rate as well as the difference between respondents and nonrespondents on the key statistic of interest, in this case, relative program valuation. As noted above, the high rate of response is impressive for a telephone survey. In addition, high response rates were achieved consistently across each of the strata, thereby reducing concerns related to differential nonresponse (see Bortz Report, Table II-1, p. 13).
- 23. The use of a probability based, stratified sample, drawn from the universe of all Form 3 cable system operators, ensures that the sample was not biased.
- 24. The interviewers used for the study had at least 5 years of experience interviewing executives. Interviewers were trained to request to speak to the individual initially identified as responsible for programming decisions from industry sources and to confirm that he or she was the person "most responsible for programming carriage decisions" (Bortz Report, p. 22). If the individual was not the appropriate person, he or she was asked to identify that person; the eventual respondent did confirm his or her responsibility for the programming carriage decisions. Table II-4 (p. 23) of the Bortz report lists the job titles of the respondents for each of the four years. These procedures ensured that only qualified respondents were included in the survey.
- 25. With respect to the sample design and implementation, it is my opinion that the survey of cable system operators conducted by Bortz meets or exceeds current industry standards.

D. The Survey Instrument

- 26. Turning to the survey instrument, Diamond (2011) identifies the following as key issues relevant⁵ to the Bortz survey:
 - Were questions on the survey framed to be clear, precise, and unbiased?
 - Did the survey use open-ended or closed-ended questions?
 - If probes were used to clarify ambiguous or incomplete answers, what steps were taken to ensure that the probes were not leading and were administered in a consistent fashion?
 - What approach was used to avoid or measure potential order or context effects?
- 27. For the 2010-2013 cable operator survey, Bortz made significant changes in the design of the questionnaire, in response, in part, to comments offered by the CRJs during the 2004-2005 hearings (Federal Register, 2010, p. 57063). These changes resulted in new introductory questions, an improved wording of the key question of interest concerning relative values among program categories, a new protocol used for interviewing cable system operators of WGN programs, and a new protocol for surveying operators carrying a large number of distant signals. Each of these changes (outlined in detail below), in my opinion, improved the survey instruments and resulted in questions that were clear, precise, and unbiased.
- 28. In previous cable system operator surveys, the initial questions in the survey asked about the popularity of specific programming and the use of distant signal

⁵ I did not include the following items identified by Diamond (2011), since I did not find them relevant to the Bortz survey: (1) "Were some respondents likely to have no opinion? If so, what steps were taken to reduce guessing?"; and (2) "If the survey was designed to test a causal proposition, did the survey include an appropriate control group or questions."

programming in advertising. Neither of these topics is necessarily a good primer for the key question of interest, specifically the relative value of program categories included in distant signals.

- 29. In response to the CRJs' comments (Federal Register, 2010, p. 57063), Bortz modified the introductory questions for its 2010-2013 surveys. The introductory questions begin by reviewing the specific distant signals carried by the system, and then asked the respondent to rank the importance of the relevant programming categories (that is, the subset of categories actually transmitted by the system⁶) and to rank the hypothetical costs associated with obtaining each category of programs. These questions serve as useful primers for the respondent, discussing the program categories that are of interest for the key question, that is, the relative value question (Question 4 in the survey).
- 30. The key question concerning relative value of programming categories was also modified for the 2010-2013 surveys in light of the opinions offered by the CRJs in 2004-2005. Previous wording for the relative value question requested that the respondent value the program categories with respect to "attracting and retaining subscribers." While this may be an important aspect for programming decisions, the CRJs in rendering their opinion for the 2004-2005 royalty distribution opined that other factors may also contribute to value placed on programming categories. In

⁶ The categories included movies; live professional and college team sports; syndicated shows, series, and specials; news and other station-produced programs; PBS and all other programming broadcast by noncommercial stations; devotional programs; and all programming broadcast by Canadian stations.

response to that concern, the revised wording for the 2010-2013 survey simply asks the respondent to "estimate the relative value to your cable system of each category of programming actually broadcast by the stations..." The revised wording allows the respondent to consider all aspects of a program's value.

- 31. The methodology used for the key question is a constant sum methodology, a type of open-ended question. A constant sum question asks the respondent to divide their "sum" (e.g., dollar budget or 100%) across a fixed number of categories. An advantage of the constant sum methodology over other question formats most specifically importance scales is that it forces the respondent to think carefully about their choices and to order their relative preferences⁷.
- 32. The constant sum methodology has been used to determine the comparative value of distant signal non-network programming by Bortz since 1983.
- 33. Although the constant sum methodology can be burdensome to respondents if the number of categories is extensive, the present application limits the respondent to seven or fewer categories for the allocation of the 100%. This is a reasonable task for the respondents to undertake and, in my opinion, the constant sum methodology is an appropriate methodology when asking respondents to determine relative value of various attributes, or in this case, specific categories of programming.

⁷ In contrast, respondents facing a rating scale can rank all program categories equally important.

34. The constant sum methodology is a well-established market research tool. Support for the use of constant sum methodology has been offered in previous proceedings by a number of experts. For example, Dr. Samuel Book noted:

The constant sum method utilized in the Bortz study is appropriate for the purpose of assessing how cable operators would have allocated programming budgets among distant signal non-network programming categories. In fact, I do not believe there would have been any better way of determining how cable operators would have allocated their programming budgets. Constant sum surveys are often used in cable industry market research, and they are relied upon in the cable industry, especially in research situations where respondent trade-offs must be considered. See Written Direct Testimony of Samuel H. Book (1989 Proceeding) (ISC Ex. 3 at 2).

- 35. Others have concurred with Dr. Book's assessment; Dr. Leonard Reid stated that the "constant sum technique, such as that employed in the 1989 JSC survey, is a valid and well-accepted research tool." See Written Direct Testimony of Leonard Reid (1989 Proceeding) (JSC Ex. 14 at 3). Dr. Joel Axelrod indicated that "the constant sum technique is widely used and its predictive validity for purchase behavior has been amply documented in my published research as well as research reported by Haley and Case." See Written Direct Testimony of Joel Axelrod (1990-92 Proceeding) (JSC Ex. 2 at 3). As noted by Dr. Robert Crandall, "the constant sum survey is the best tool to answer the question presented in this proceeding." See Written Direct Testimony of Robert Crandall (2004-2005 Proceeding) (JSC Ex. 4 at 7).
- 36. One of the advantages of using interviewers for data collection (as compared to web-based or mail surveys) is that interviewers can assist respondents for whom

the task may be difficult. The interviewer instructions for Question 4 included the requirement that the interviewer prompt respondents if the valuations across the relevant categories did not sum to 100%.

- 37. In addition, once the respondent completed the valuation question, the interviewer reviewed the estimates with the respondent and queried them as to whether or not there were any changes to be made. In doing so, the respondent has the opportunity to further consider his or her responses, an approach that ensures for high quality of the resulting estimates.
- 38. As a means to reduce potential order or context effects related to the relative values assigned to the various program categories, the presentation order of the program categories was rotated across respondents. That is, for some respondents, the first category for which a valuation was requested may have been "movies" but "movies" was not consistently presented as the first category.
- 39. The retransmission of WGN programming presents a challenge with respect to valuations, since WGN retransmissions include both compensable and non-compensable programs. In their 2004-2005 distribution decision the CRJs commented on this issue (see Federal Register, 2010, p. 57067). To address the issue of non-compensable programming on WGN, for the 2010-2013 surveys, cable system operators who carried only WGN as their distant signal were provided a WGN programming summary identifying the compensable programing broadcast in the relevant year. These cable system operators were instructed to respond to the survey only with respect to these specific compensable programs. This change is an

important clarification for those operators for whom WGN is the only distant signal purchased.⁸

40. Changes in interviewing protocol were also adopted for those cable system operators with a large number of distant signals. The consolidation of cable systems (with respect to copyright reporting purposes) has led to an increased number of cable systems carrying nine or more distant signals. An analysis conducted by Bortz of systems with more than eight distant signals found that more than 93 percent of the signals that ranked ninth or lower in distant reach were carried as distant signals to fewer than 5 percent of the system's subscribers, and those signals accounted for less than 1 percent of royalty fees generated by all Form 3 systems that carried any U.S. commercial distant signals over the 2010-13 period (see Bortz Report, p. 35). As a result of this limited reach, cable system operators that carried nine or more distant signals were asked about only the eight most widely carried distant signals on the system. In my opinion, reducing the burden in this way for large cable system operators would most likely improve the quality of the reported data with little to no resulting bias in the resulting estimates.

E. Data Collection and Processing

- 41. Diamond (2011) also offers guiding questions with respect to mode of data collection and the use of interviewers:
 - What limitations are associated with the mode of data collection used in the survey?

⁸ Note that this change has no impact on those cable systems for whom WGN is one of several distant signals purchased.

- Were interviewers appropriately selected and trained?
- Did the interviewers know about the survey and its sponsorship?
- What procedures were used to ensure and determine that the survey was administered to minimize error and bias?

In addition, she discusses post survey processing by asking⁹:

- What was done to ensure that the data were recorded accurately?
- 42. As noted above, the cable operator survey was conducted by telephone. The use of a telephone for data collection is an appropriate mode, especially for an establishment survey. The use of telephone data collection ensures the identification of an appropriate respondent for the survey. Telephone data collection also is efficient (less costly than face to face data collection) while offering the advantages of an interviewer (higher response rates and the ability to address respondents' questions).
- 43. All of the interviewers used for this data collection were experienced in conducting interviews with executives. They were not aware of the sponsor for the survey. Interviewers were monitored to ensure proper interviewing and recording of responses (see Bortz Report, p. 20).
- 44. Data entry was completed by Bortz. Personnel compared entered data to hard copy questionnaires to confirm the accuracy of the entered data (see Bortz Report, p. 23). The verification procedure was completed twice.

⁹ I have not included the following question raised by Diamond (2011), since it is not relevant to the present study or analysis: "What was done to ensure that the grouped data were classified consistently and accurately?"

F. Disclosure and Reporting

- 45. The final set of questions that Diamond (2011) suggests as guidelines to understanding the quality of surveys and survey data address disclosure and reporting:
 - When was the information about the survey methodology and results disclosed?
 - Does the survey report include complete and detailed information on all relevant characteristics?
 - In surveys of individuals, what measures were taken to protect the identities of individual respondents?
- 46. All details concerning the methodology used by Bortz in conducting the survey of cable system operators are included in the Bortz Report, including, but not limited to, the identification of the population, detailed information about the sampling frame and the sampling procedures, information concerning completion rates, questionnaire design, interviewer training, and estimates based on the survey data including the means by which to estimate the margin of error.
- 47. There is no information in the Bortz Report that reveals the identity of the individual cable system operators or the identity of the specific respondents. The Bortz Report further notes that survey respondents "were assured that their responses would be kept confidential (i.e., results would be reported only in an aggregated form)" (p. 22).

V. Conclusions

48. The 2010-13 surveys of cable system operators conducted by Bortz continue a long series of similar surveys that employed constant sum methodology for the

estimation of relative program value related to distant signal retransmissions. The

sample design and implementation as well as the questionnaire design all meet or

exceed the guidelines as outlined by Diamond (2011) in the Reference Manual on

Scientific Evidence. The similarity of estimates within categories across the years

speaks to the reliability of the sampling and measurement process. It is my

professional opinion that the resulting data offer both a valid and reliable estimate

of the relative program values for distant signal retransmissions among cable

system operators during the years 2010-13.

I declare under penalty of perjury that the foregoing is true and correct.

Nancy A. Mathiowetz

APPENDIX A

Nancy A. Mathiowetz

RESEARCH AND TEACHING INTERESTS

Survey methodology, research design and methods, quantitative methods, and statistics.

EDUCATION

University of Wisconsin, Madison, Wisconsin

B.S., Sociology (with honors), 1978

University of Michigan, Ann Arbor, Michigan

M.S., Biostatistics, 1983

Ph.D., Sociology, 1988

Dissertation: The Applicability of Cognitive Theory to Long-Term Recall Questions in

Social Surveys

PROFESSIONAL EXPERIENCE

2015-	Professor Emerita, University of Wisconsin-Milwaukee
2005-2015	Professor, Sociology Department, University of Wisconsin-Milwaukee
2006-2009	Chair, Sociology Department, University of Wisconsin-Milwaukee
2003-2005	Associate Professor, Sociology Department, University of Wisconsin-
	Milwaukee
2001-2003	Associate Professor, Joint Program in Survey Methodology, University
	of Maryland; Adjunct Associate Research Scientist (Institute for Social
	Research) and Adjunct Associate Professor (Sociology Department),
	The University of Michigan
1995-2001	Assistant Professor, Joint Program in Survey Methodology, University
	of Maryland; Adjunct Assistant Research Scientist (Institute for Social
	Research) and Adjunct Assistant Professor (Sociology Department),
	The University of Michigan
1997-1998	ASA/NSF Fellowship, Bureau of Labor Statistics
1992	Guest Professor, Zentrum fur Umfragen, Methoden und Analysen,
	Germany

1992-1995	Deputy Director, Division of Statistics and Research Methodology,
	Agency for Health Care Policy and Research
1993-1995	Adjunct Assistant Professor, Joint Program in Survey Methodology,
	University of Maryland
1990-1992	Special Assistant to the Associate Director, Statistical Design,
	Methodology, and Standards, U.S. Bureau of the Census
1987-1990	Senior Research Analyst, National Center for Health Services
	Research
1984-1987	Senior Research Associate, Westat, Inc.

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- Nancy A. Mathiowetz (1992) "A Behavioral Paradigm for Understanding Nonresponse to the 1990 Census." Paper presented at the Annual Conference of the American Association of Public Opinion Research.
- John F. Moeller and Nancy A. Mathiowetz (1991) "Catastrophic Prescription Expenditures for the Medicare Population." Paper presented at the Annual Meetings of the Gerontological Society of America.
- Nancy A. Mathiowetz, Terry DeMaio, and Elizabeth Martin (1991) "Political Alienation, Voter Registration and the 1990 Census." Paper presented at the annual conference of the American Association of Public Opinion Research.
- John F. Moeller and Nancy A. Mathiowetz (1990) "Problems of Screening for Poverty Status," *Proceedings of the Section on Survey Research Methods*, American Statistical Association.
- Joel Leon, Tamra Lair, Pamela Farley Short, and Nancy A. Mathiowetz (1989) "1987 National Estimates of the Functionally Disabled Elderly: Policy Implications of Varying Definitions of Disability," Winter Meetings of the American Statistical Association.
- Nancy A. Mathiowetz (1988) "Forgetting Events in Autobiographical Memory: Findings from a Health Care Survey," *Proceedings of the Section on Survey Research Methods*, American Statistical Association.
- Nancy A. Mathiowetz (1987) "Response Error: Correlation between Estimation and Episodic Recall Tasks," *Proceedings of the Section on Survey Research Methods,* American Statistical Association.

- Nancy A. Mathiowetz, Marc L. Berk, and Andrew A. White (1987) "The Effect of Changing Interviewers and Mode of Interview in a Panel Health Survey." Winter Meetings of the American Statistical Association.
- Nancy A. Mathiowetz (1986) "Mode of Initial Contact for Personal Interviews: Findings from Two Experiments," *Proceedings of the Section on Survey Research Methods,* American Statistical Association.
- Nancy A. Mathiowetz (1986) "Episodic Recall vs. Estimation: The Applicability of Cognitive Theory to Problems in Survey Research." Presented at Annual Meetings of the American Association of Public Opinion Research.
- Nancy A. Mathiowetz (1985) "The Problem of Omissions and Telescoping Error: New Evidence from a Study of Unemployment." *Proceedings of the Section on Survey Research Methods*, American Statistical Association.
- Nancy A. Mathiowetz, Doris Northrup, and Sandra Sperry (1985) "An Evaluation of Mode of Initial Contact for In-Person Interviews." Presented at Annual Meetings of the American Association of Public Opinion Research.
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- Nancy A. Mathiowetz and Charles F. Cannell (1980) "Coding Interviewer Behavior as a Method of Evaluating Performance," *Proceedings of the Section on Survey Research Methods*, American Statistical Association.
- Robert M. Groves, Lou J. Magilavy, and Nancy A. Mathiowetz (1980) "The Process of Interviewer Variability: Evidence from Telephone Surveys," *Proceedings of the Section on Survey Research Methods*, American Statistical Association.
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- Nancy A. Mathiowetz (1998) "The Impact of Biannual Interviewing on Nonresponse and Measurement Error." Paper commissioned by the National Longitudinal Study Technical Review Committee.
- Nancy A. Mathiowetz. (1994) "Autobiographical Memory and the Validity of Survey Data: Implications for the Design of the Panel Study of Income Dynamics." Paper commissioned by the Panel Study of Income Dynamics Technical Advisory Board.
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EDITORIAL ACTIVITIES

Associate Principal Investigator, Time-Sharing Experiments for the Social Sciences (TESS), 2012–

Editor, Public Opinion Quarterly, 2008-2012

Associate Editor, Public Opinion Quarterly, 2004 -2007

Associate Editor, Journal of Official Statistics, 1998-2004

Reviewer, John Wiley Series in Survey Methodology

Reviewer, Journal of the American Statistical Association

Reviewer, Survey Methodology

Reviewer, Journals of Gerontology

Reviewer, Reference Manual on Scientific Evidence, Federal Judicial Center

TEACHING

Courses

Methods of Research and Analysis for Urban Social Institutions (Soc 982)

Advanced Statistical Methods in Sociology (Soc 760)

Fundamentals in Survey Methodology (Soc 752)

Questionnaire Design (Soc 754)

Research Methods in Sociology (Soc 362)

Data Collection Methods in Survey Research

Survey Management

Survey Practicum

Invited Lectures, Short Courses and Workshops

Questionnaire Design, University of Wisconsin Executive Education, 2004

Methodological Issues in the Measurement of Disability, United Nations, November, 2000

Survey Design for Response Quality in Household Surveys, 2000, Invited two-day workshop, Statistics Sweden, 2000

Survey Management, 1999, one-day short course, Department of Agriculture

Survey Management, 1998, one-week course, Summer Institute in Survey Research Techniques, Institute for Social Research, University of Michigan

Survey Management, 1998, two-day short course, JPSM Short Course

An Introduction to Pretesting, two-day short course, 1997, JPSM Short Course Invited Lecture, Dartmouth College, 1997

Telephone Survey Design, one-week course, Summer Institute in Survey Research Techniques, Institute for Social Research, University of Michigan

Invited Scholar, Iowa State University, 1996

Questionnaire Design, 1995, half-day course, American Association of Public Opinion Research

Graduate Student Advising

Mark Caldwell, Ph.D. Dissertation Committee, 2014-2015

Marcella Blom-Willis, MA Chair, 2014-2015

Elisabeth Callahan, MA Chair, 2014-2015

Lee Chang, MA Chair, 2013-2014

Erica Svojse, MA Chair, 2013-2014

Kate Brown, MA Member, 2013-2014

Rachel Custasis, MA Chair, 2012-2013

Brendan Held, MA Chair, 2012-2013

Ben Gilbertson, MA Member, 2012-2013

Kara Ritchardt, MA Member 2012-2013

Maureen Pylman, Ph.D. Prelim Chair, 2012-2013

Brienne Schreiber, Sociology, MA, Chair, 2011-2012

Atiera Coleman, Sociology, MA, Member, 2011-2012

Crystal Mathes, Sociology, MA, Member, 2011-2012

Jackie Austin, Sociology, MA, Chair, 2010-2011

Liz Grimm, Human Movement Sciences, Ph.D., 2010-2011

Matt Wagner, Urban Studies Program, Ph.D., 2008

Kirsten Brown, Sociology, MA, Chair, 2007-2008

Peter Barwis, Sociology, MA, Member, 2006-2007

Heather Price, Sociology, MA, Member, 2006-2007

Georgiann Davis, Sociology, MA, Chair, 2005-2006

Leslie Mason, Sociology, MA, Chair, 2005-2007

Kyle Poppie, Sociology, MA, Member, 2006-2007

Molly Simmerman, Sociology, MA, Chair, 2006-2007

Adam Lippert, Sociology, MA, Member, 2006

Julie Weeks, Sociology, Ph.D. Committee, 1999-2000

Jill Walston, Education Measurement and Statistics, Ph.D. Committee, 1999-2000

PROFESSIONAL ACTIVITIES

American Association for Public Opinion Research

Recipient, AAPOR Award for Exceptionally Distinguished Achievement, 2015

Past President, 2008-2009

President, 2007-2008

President-elect/Vice President, 2006-2007

Chair, Standards Committee, 2005-2006

Associate Chair, Standards Committee, 2004-2005

Secretary-Treasurer, 1995-1996

Chair, Education Committee, 1995-2001

Associate Secretary-Treasurer, 1994-1995

Membership Chair, 1990-1991

Associate Membership Chair, 1989-1990

American Statistical Association

Elected Fellow, American Statistical Association, 2012

Member, Survey Review Committee, 2001-2003

Member, Census Advisory Committee, 2000-2002

Member, Committee on Statistics and Disability, 2000-2006

Member, Committee on Meetings, 1997-2001

Member, E.C. Bryant Scholarship Committee, 1997-2003

Program Chair, Section on Survey Research Methods, 1995-1996

Program Chair-Elect, Section on Survey Research Methods, 1994-1995

Member, Continuing Education Committee, 1988-1990

Chair, Continuing Education Winter Conference, 1988-1989

Member, Survey Research Methods Technical Advisory Committee on SIPP, 1986-1990

Advisory Committees

American Statistical Association Committee on Energy Statistics, 2010-2015 Bureau of Labor Statistics, Consumer Expenditure Survey Expert Panel, 2010 California Health Interview Survey Technical Advisory Committee, 2009-

National Center for Health Statistics, Board of Scientific Counselors, Long Term Care Program Review Panel, 2009

National Academy of Science, Committee on National Statistics, Panel to Review U.S. Department of Agriculture's Measurement of Food Insecurity and Hunger, 2004-2005

National Advisory Board, Institute for Research on Poverty, University of Wisconsin, Wisconsin Works Child Support Demonstration, 1998-2001

National Gambling Commission, Technical Advisory Panel, 1998

National Longitudinal Survey of Children and Families in the Child Welfare System, Technical Advisory Panel, 1998-2000

Substance Abuse and Mental Health Services Administration, Technical Advisory Committee, 1997

National Longitudinal Surveys Technical Review Committee, Bureau of Labor Statistics, 1993-1999

Bureau of Labor Statistics, Invited Panel Member, Questionnaire Design Advisory Conference for the Consumer Expenditure Survey and Current Population Survey, 1987

Grants Review

National Institutes of Health, Biostatistical Methods and Research Design Study Section, Member, 2003-2007 and various special emphasis panels, 2008-

Russell Sage Foundation, 2000

National Science Foundation, 1998-

National Institute of Health, Reviewer, Mental Health AIDS and Immunology Review Committee, 1996

Reports Review

National Academy of Science, Reviewer, *Conducting Biosocial Surveys*, 2010 U.S. Department of Agriculture, Reviewer, *Continuing Survey of Food Intake*, 1996 National Academy of Sciences, Reviewer, *Report on Survey of Scientists and Engineers*, 1991

Miscellaneous

Organizer, Interviewer-Respondent Interaction Workshop, Boston, MA May, 2013 Chair, Charles Cannell Fund in Survey Methodology, 2003-

Federal Committee on Statistical Methodology, Member, Subcommittee on Statistical Training, 1995-1999

Social Science Research Council, Invited Participant, Workshop on the Cognition and Measurement of Pain, 1987

Social Science Research Council, Invited Participant, Seminar on Effect of Theory-Based Schemas on Retrospective Data, 1987

University of Wisconsin-Milwaukee

Faculty Chair, Zilber School of Public Health, 2014-2015

Chair, School of Public Health Founding Dean Search Committee, 2010-2011

Member, School of Public Health Executive Committee, 2010-2011

Chair, Merit Committee, Sociology Department, 2010-2013

Member, School of Public Health Planning Council, 2007-2009

Member, Division of Social Sciences Executive Committee, 2005-2008

Official Representative to the Inter-University Consortium for Political and Social Research, 2003-2007

Chair, Recruitment Committee, Department of Sociology, 2005; 2012

Chair, Curriculum Committee, Urban Studies Program, 2004-2005; 2010-2012

Member, Research Committee, Center for Age and Community, 2003-2005

Member, Applied Gerontology Certificate Committee, 2004-2006

Member, Executive Committee, Urban Studies Program, 2005

Member, Graduate Committee, Sociology Department, 2005-2009; 2012-2015

Before the COPYRIGHT ROYALTY JUDGES Washington, DC

)	
In re)	
)	
DISTRIBUTION OF CABLE)	NO. 14-CRB-0010-CD (2010-13)
ROYALTY FUNDS)	
)	

Written Rebuttal Testimony of

NANCY A. MATHIOWETZ September 15, 2017

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I. QUALIFICATIONS

- 1. I am Professor Emerita, Department of Sociology at the University of Wisconsin-Milwaukee (UWM). Prior to joining the faculty at UWM in 2003, I was Associate Professor, Joint Program in Survey Methodology, University of Maryland and University of Michigan. My research focuses on various aspects of survey methodology, including, but not limited to, the effects of mode and methods of data collection, question and questionnaire design, response error, and means to assess and reduce various sources of error in the survey process. I have taught courses on survey methodology, questionnaire design, and advanced statistical methods and have offered short courses on questionnaire design to various audiences. I have testified as an expert on survey research methodology in federal and state court cases.
- 2. My qualifications as an expert on survey research methodology are set forth in greater detail in Appendix A to my written direct testimony in this proceeding on behalf of the Joint Sports Claimants (JSC) (dated December 22, 2016).

II. INTRODUCTION AND SUMMARY

3. My written direct testimony discusses the 2010-13 cable operator surveys conducted by Bortz Media & Sports Group, Inc. (Bortz surveys). As I explain in that testimony, the Bortz surveys provide a valid and reliable assessment of the relative market value of the different categories of distant signal programming that cable systems carried during the years 2010-13. The purpose of my rebuttal testimony is to address the written direct testimony submitted in this proceeding by (1) Joel Steckel, Ph.D., Howard Horowitz, and Martin R. Frankel, Ph.D., on behalf of the Program Suppliers; and (2) Debra J. Ringold, Ph.D. on behalf of the Canadian Claimants Group.

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- 4. The testimony of Dr. Joel Steckel is a critique of surveys of cable system executives, that is, the methodology used by both Horowitz and Bortz in their respective data collection efforts. In my opinion, Dr. Steckel is incorrect to assert that cable operator surveys are inadequate for assessing the issue of relative market value in this proceeding. Dr. Steckel's criticism are far ranging; he asserts that the surveys do not measure market value, sample the wrong population (cable system operators), and result in invalid data due to the nature of the key constant sum question (which he considers too complex) and the mode of data collection (telephone). These criticisms have been raised in previous proceedings; the Copyright Royalty Judges (CRJs) in the Distribution of the 2004 and 2005 Cable Royalty Funds noted, "Yet, whether taken individually or viewed as a group, we do not find these other criticisms to undermine the general usefulness of the Bortz survey for the purpose offered" (Federal Register, Vol. 75, September 17, 2010, p. 57068). I provide below (see Section III) detailed responses to Dr. Steckel's arguments against the use of the Bortz survey data.
- 5. The testimony of Howard Horowitz and Dr. Martin Frankel present the methodology and findings from surveys conducted in 2010-2013 ("Horowitz surveys"); the methodology used in the Horowitz surveys is similar to that used by Bortz for the JSC. However, there are key differences in the design and implementation of the Horowitz survey and the Bortz survey that I discuss below. The testimony of Dr. Debra Ringold describes the methodology and findings from surveys conducted in 2010-2013; in contrast to the Bortz and Horowitz surveys, the Ringold/Ford surveys are limited to the assessment of the relative value of programming on Canadian Signals.

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- 6. While properly designed cable operator surveys are useful for assessing relative value in this proceeding, my review of the Horowitz survey and the Ford/Ringold survey leads me to conclude that the flaws in each of these surveys renders them neither reliable nor valid for the production of valuation estimates. As detailed below (Section IV), the Horowitz survey design suffers from a number of significant flaws, most notably the inclusion of incorrect and misleading information as part of the questions posed to the respondents. In addition, the implementation methodology places undue burden on the respondents, asking executives to provide information for the full universe of CSOs (not just the sampled CSOs) as well as asking executives to report about a large number of CSOs, often in a single questionnaire.
- 7. With respect to the Ford/Ringold survey, the analytic sample is biased, giving preference to French-language systems, and its small sample size leads to unreliable estimates. Other concerns with the Ford/Ringold survey are detailed below (Section V).

III. DR. STECKEL'S CRITICISMS OF THE BORTZ SURVEY ARE WITHOUT MERIT

8. Dr. Joel Steckel criticizes both the Horowitz and Bortz surveys. He asserts that the surveys do not measure market value, sample the wrong population (cable system operators), and result in invalid data due to the nature of the key constant sum question (which he considers too complex) and the mode of data collection (telephone). Dr. Steckel advocates for surveying the consumers of cable system programming, the subscriber, as opposed to surveying cable system operators. These are not new arguments in these proceedings—for example, each of these points was previously made

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by Program Suppliers' expert Dr. Alan Rubin, whom Dr. Steckel cites (p. 34)¹—and despite these arguments the CRJs, their predecessors and the courts repeatedly have found the Bortz survey to be useful in determining the appropriate allocation of copyright royalties.

- 9. I disagree with Dr. Steckel's assessment of the two surveys.² In reviewing Dr. Steckel's critique, I will draw upon Diamond's "Reference Guide on Survey Research," one of the chapters of the *Reference Manual on Scientific Evidence, Third Edition* (2011).³ Diamond frames her chapter as responses to a series of questions, several of which speak directly to the concerns raised by Dr. Steckel. These questions include:
 - Was the survey designed to address relevant questions?
 - Was an appropriate universe or population identified?
 - Were questions on the survey framed to be clear, precise and unbiased?
 - What limitations are associated with the mode of data collection used in the survey?

Dr. Steckel also raises other concerns that do not align with the *Reference Manual*. I will address these issues at the end of this section.

¹ Like Dr. Steckel, Dr. Rubin argued that the appropriate population to survey was not cable system operators but cable subscribers (*e.g.*, September 2009 Corrected Testimony of Alan M. Rubin, pp. 4, 9-14); that the Bortz constant sum question was too complex (*e.g.*, November 1991 Testimony of Alan M. Rubin, pp. 10-11; October 1985 Testimony of Alan M. Rubin, pp. 5-6); and that the surveys should not have been conducted over the telephone (*e.g.*, November 1991 Testimony of Alan M. Rubin, p. 7).

² I note that Dr. Steckel's review of the Bortz survey relies on the 2004-2005 Bortz surveys and does not reflect multiple changes made in the methodology for the 2010-2013 Bortz surveys, and therefore a number of his criticisms are inapplicable to the Bortz surveys at issue in these proceedings.

³ Dr. Steckel cites to a brief discussion of survey research in the *Manual for Complex Litigation* (4th ed. 2004), which includes some similar criteria to, but is less comprehensive than, Diamond's chapter in the 2011 *Reference Manual*.

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A. Was the survey designed to address relevant questions?

10. The language used by the CRJs in the Distribution of the 2004 and 2005 Cable Royalty Funds (Federal Register, Vol. 75, September 17, 2010) states:

...the sole governing standard is the relative marketplace value of the distant broadcast signal programming retransmitted by cable systems during 2004 and 2005 (p. 57065).

Dr. Steckel asserts that the Bortz and Horowitz surveys' measurements of the cable system operators' valuations do not correspond to the marketplace value standard. As Dr. Steckel acknowledges (p. 22), the Copyright Arbitration Royalty Panel (CARP) determined that the constant sum question posed in the Bortz survey "is largely the question the Panel poses when it constructs a simulated market" (Report of the CARP in Docket No. 94-3 CARP CD 90-92, p. 65 (May 31, 1996). The CARP further stated that the Bortz survey was "focused more directly than any other evidence to the issue presented: relative market value" (*Id.*).

11. Dr. Steckel contends that the CARP was incorrect. However, subsequent decisions in statutory royalty proceedings likewise have found that the Bortz survey is well-suited to assessing the relative market value of different types of programming to cable system operators (CSOs) in the hypothetical market. For example, in approving the CARP allocation of the 1998-99 cable royalties, the Librarian of Congress approved the CARP's reliance on the Bortz survey and cited the CARP's determination "that the Bortz survey best projected the value of broadcast programming in the hypothetical

⁴ The Librarian of Congress adjusted the CARP's royalty allocations to account for settlements of claims by the Music Claimants and National Public Radio, and to correct errors in the apportionment of "3.75 Funds," and otherwise approved the CARP's determination; the Librarian's decision was affirmed on appeal. *National Association of Broadcasters v. Librarian of Congress*, 146 F.3d 907 (D.C. Cir. 1998).

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marketplace . . ." (Federal Register, Vol. 69, January 26, 2004, p. 3609). The Librarian's decision was affirmed in an appellate decision stating: "Nor did the CARP act unreasonably in declining to rely on Nielsen for direct evidence of viewing, as Bortz adequately measured the key criterion of relative market value. Moreover, as the CARP put it, Bortz 'subsumes *inter alia* all viewing data that a CSO might consider when assessing relative value of programming groups." *Program Suppliers v. Librarian of Congress*, 409 F.3d 395, 402 (D.C. Cir. 2005). The court further observed that "[t]he Bortz survey, supplied by JSC, measures what CSOs perceive as the relative market value of different types of programming." *Id.* at 398. Similarly, the CRJs' decision allocating the 2004-05 cable royalties found "the Bortz study to be the most persuasive piece of evidence provided on relative value in this proceeding" and that "[t]he Bortz intervals certainly mark the most strongly anchored range of relative programming values produced by the evidence in this proceeding" (Federal Register, Vol. 75, September 17, 2010, pp. 57066, 57068).

12. Based on the historical comments of the CRJs, CARP, the Librarian, and the Court of Appeals, it appears that both the Bortz and Horowitz surveys, by focusing on the relative valuations placed on program categories by cable system operators, are in fact addressing the relevant question of interest.

B. Was an appropriate universe or population identified?

13. Dr. Steckel criticizes both the Bortz and Horowitz surveys for surveying cable system operator executives. Specifically, he maintains that "the relevant opinions for projecting marketplace results are not those of cable executives; they are those of cable customers" (p. 40). He goes on to state, "If you want to know what customers (*i.e.*, the market) value, ask them" (p. 41). However, as discussed above, the CRJs, CARP, the

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Librarian and the appellate court consistently have stated that the relevant customers in the hypothetical market would be the CSOs, and that the Bortz survey is an appropriate methodology for assessing CSOs' relative valuations. Thus, the CRJs' 2004-05 determination stated "the Bortz survey focuses on the appropriate buyer in the hypothetical market—*i.e.*, the cable operator" (Federal Register, Vol. 75, September 17, 2010, p. 57066).

C. Were questions on the survey framed to be clear, precise and unbiased?

- 14. The criticisms that Dr. Steckel offers with respect to the constant sum questions are unfounded. As the Librarian has observed, "uncontroverted testimony and years of research indicate rather conclusively that constant sum methodology, as utilized in the Bortz survey, is highly predictive of actual marketplace behavior" (Federal Register, Vol. 69, January 26, 2004, p. 3615). The CRJs have likewise stated: "We find that the Bortz study is founded on a method—the constant sum survey—that has been long regarded as a recognized approach to market research. Tr. at 50 (Trautman), 1299 (Ringold), and 3007 (Gary Ford)" (Federal Register, Vol. 75, September 17, 2010, pp. 57066-67). These findings reflected substantial evidence presented by JSC and other parties regarding the suitability of constant sum questions for purposes of the Bortz survey.
- 15. For example, as Dr. Steckel notes (p. 34), Professor Leonard Reid presented detailed testimony explaining why constant sum questions were appropriate for the Bortz survey. Professor Reid explained that "[t]he constant sum scale is a widely accepted and often-used measurement tool in marketing research" and discussed a number of the underlying studies establishing the utility of that technique (August 1991 Testimony of

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Leonard N. Reid (Reid Testimony) (JSC Written Direct Statement, Vol. II, Tab 14), pp. 5-14). As Professor Reid observed, "the constant sum technique is particularly well-suited for measuring behavioral intentions, past actions, and evaluative preferences" (Reid Testimony, p. 6). He further observed that "[t]he pragmatic value of the constant sum technique for measurement purposes may be demonstrated by its application in the field," noting the routine use of this technique by leading marketing firms and major corporations (Reid Testimony, pp. 12-14).

- 16. While Dr. Steckel faults Dr. Reid for citing (among other studies) a seminal study by Dr. Joel Axelrod and suggests that Dr. Axelrod's study weighs against the use of the constant sum technique for purposes of the Bortz survey (p. 35), he ignores (and perhaps was unaware) that Dr. Axelrod himself has testified in a prior cable royalty distribution proceeding that "the use of the constant sum technique in order to determine the relative values that cable operators attach to different types of programming is appropriate" and that nothing in his study suggests any issue with Bortz's use of that technique (Oral Testimony of Joel N. Axelrod, Docket No. 94-3 CARP CD 1990-1992 (Axelrod Oral Testimony) (JSC Written Direct Statement, Vol. III, Tab 2), pp. 11130-34, 11249-50; February 1996 Rebuttal Testimony of Joel Axelrod (Axelrod Rebuttal Testimony) (JSC Written Direct Statement, Vol. II, Tab 2), pp. 2-4).
- 17. I agree with Dr. Steckel that the constant sum question might be difficult to answer if posed to respondents of a general population survey. But the respondents to the Bortz and Horowitz surveys are executives of cable system operations, who engage in complex business decisions as part of their professional lives. Dr. Steckel suggests that the task in the constant sum method requires executives to make judgments about

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"unfamiliar constructs," but program valuations are not unfamiliar constructs to cable system executives.⁵ As noted by Bortz, survey interviewers sought responses from the individual "most responsible for programming carriage decisions" (Bortz, pp. 14-15). The Written Rebuttal Testimony of Daniel Hartman (pp. 16-17) and Allan Singer (p. 11) confirm that the task of assessing relative value of programs is part of the job related to purchasing signals.

18. Dr. Steckel also fails to account for differences between the Bortz and Horowitz surveys with respect to the formulation of the questions. It is important to point out that in his critique of the Bortz methodology, Dr. Steckel reviewed the 2004-2005 data collection instrument and not the revised instrument used by Bortz for the 2010-2013 surveys. Presented below is the wording of the constant sum question used by Bortz in 2010-2013:

Now, I would like you to estimate the relative value to your cable system of each						
category of programming actually broadcast by the stations I mentioned during 2010,						
excluding any national network programming from ABC, CBS and NBC. Just as a						
reminder, we are only interested in U	J.S. commercial station(s), U.S.				
non-commercial station(s)	, and Canadian sta	tion(s)				
	Assume your system sp	ent a fixed dollar amount				
in 2010 to acquire all the non-netwo	rk programming actually	y broadcast during 2010				
by the stations I listed. What percen	tage, if any, of the fixed	dollar amount would				
your system have spent for each cate	egory of programming?	Please write down your				
estimates, and make sure they add to	o 100 percent. ⁶					

⁵ I note that this argument has been asserted previously. See October 1985 Testimony of Alan M. Rubin (p. 5) in which he states, "Operators and subscribers were asked to do something completely abnormal to their routine cable television behaviors." Despite this criticism, previous CRJs have consistently looked to the Bortz survey with respect to their allocation decisions (see, for example, Federal Register, Vol. 75, September 17, 2010).

⁶ In response to comments expressed by the CRJs in their 2004-2005 Distribution Order, the wording used in 2010-2013 was modified from the wording used in 2004 and 2005 where, as in previous surveys, the Bortz constant sum question asked respondents to "assess the different programming categories in terms of their relative value in 'attracting and retaining subscribers'" (Bortz, p. 40).

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The wording used for the Horowitz surveys is as follows⁷:

Now, considering everything we have been discussing, I would like you to estimate the *relative value* to your cable system of each type of [NETWORK CARRYING SYSTEMS (E): *non-network*] programming actually broadcast during 2013 by [INSERT STATION(S) FROM LIST - COLUMN J].... Assume you had a fixed dollar amount to allocate for the [NETWORK CARRYING SYSTEMS (E): *non-network*] programming actually broadcast during 2013 on [INSERT STATION(S) FROM LIST - COLUMN J].... Considering the value of each type of programming to your cable system, what percentage, if any, of the fixed dollar amount would you allocate for each type of programming? Please write down your estimates and make sure they add to 100 percent.... In formulating your percentage, please think about all the factors we have been discussing, including using this programming in your advertising and promotions in 2013 to attract and retain customers, the importance of this programming to you and your subscribers, and any other considerations you may have.

As is evident from a comparison of the wording of these two constant sum questions, the Horowitz question asks the respondent to focus on valuations related to advertising and attracting and retaining customers, similar to the wording used in 2004-2005 by Bortz and criticized by the CRJs with respect to the 2004-2005 Distribution of Cable Royalty Funds. While the Horowitz question used in 2010-2013 does ask the respondent to "think about all factors," the wording specifically calls out the issue of attracting and retaining customers. As noted by the CRJs in 2010, "a myriad of other net revenue considerations may be involved in any programming decisions" (Federal Register, Vol. 75, September 17, 2010, p. 57066).

19. A key requirement as outlined by Diamond is that questions be framed so as not to bias the respondents. As discussed in part IV below, the Horowitz questionnaire fails this condition, specifically in its use of examples for the Program Suppliers category.

⁷ Note that the wording reported here is not the wording used for PBS only or Canadian only stations. See Direct Testimony of Howard Horowitz (Horowitz), Appendix A, p. 36.

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The examples used to describe the Program Suppliers category are misleading and biased in favor of Program Suppliers. See pages 16-18 below.

- 20. Dr. Steckel states that both the Bortz and Horowitz questions are "ambiguous" (p. 25) because the respondent is asked about a "system" (singular) when, in many cases, the respondent has responsibility for multiple cable systems. However, on this design issue, the Bortz and Horowitz surveys differ significantly. In the Bortz survey, if a single executive was responsible for more than one cable system, that executive completed a separate survey questionnaire for each system, focusing on a single cable system's distant signals for each questionnaire (Written Rebuttal Testimony of James M. Trautman, p. 43, n. 29). In contrast, in the Horowitz survey, when a single executive was the respondent for more than one system, the executive "was only asked to respond to one survey for all the systems with the same channels" (Horowitz, p. 8), meaning that the respondent was tasked with addressing multiple cable systems in a single survey questionnaire. Hence, the criticism offered by Dr. Steckel on this point is only applicable to the Horowitz data collection effort.
- 21. I note that Dr. Steckel offers no empirical data to support his assertion that the constant sum questions are "complex" (p. 28).⁸ In my experience, when respondents are asked questions that they are not able to process cognitively due to the complexity of the question, the data reflect this in either high rates of missing data or illogical responses. We see neither of these patterns in the Bortz data.

⁸ Program Suppliers' experts have made the same assertion in prior proceedings; see for example the October 1985 Written Direct Testimony of Alan M. Rubin, and November 1991 Written Direct Testimony of Alan M. Rubin. Despite these previous concerns, the Program Suppliers adopted a constant sum methodology for the measurement of valuation in 2010-2013.

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- 22. Finally, in his criticism of the constant sum methodology, Dr. Steckel notes several recent publications that outline new methodologies for collecting preference data. In contrast to the vast literature supporting the extensively used constant sum approach, Dr. Steckel is advocating for the adoption of techniques only recently introduced in the literature without significant testing and validation for the question of interest to the CRJs.
- 23. With respect to the Lourviere and Islam article cited by Dr. Steckel for the proposition that "indirect" measures of importance outperform direct measures, it is important to note that the authors also offer several cautions with respect to the use of "indirect" measures of which Dr. Steckel is advocating, including the susceptibility of these measures to context effects. Moreover, the authors never conclude that indirect measures outperform direct measures such as constant sum questions.
- 24. With respect to the other methodologies cited by Dr. Steckel (Netzer and Srinivasan, 2011 and Srinivasan and Wyner, 2009), these studies have only recently moved into the peer-reviewed literature, and both studies are based on web-based data collection (no interviewer) and focus on cases where there are a large number of attributes to assess (> 10). In contrast, the Bortz and Horowitz constant sum task focuses on only 5 to 8 program categories (depending upon the system) and were completed through live telephone interviews. One would be remiss to adopt the new approaches described in these articles based on the findings from a few recent studies.
 - D. What limitations are associated with the mode of data collection used in the survey?
- 25. Dr. Steckel claims that using the telephone for data collection results in unreliable and invalid data. Yet he does not provide any empirical support for that claim, and he

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ignores that telephone surveys of business entities are widely used and recognized as producing reliable, valid data.⁹

- 26. As Dr. Axelrod testified in the 1990-1992 royalty proceedings, the use of telephone surveys is "an accepted survey research technique," is "widely done," and is appropriate for the purpose of administering the Bortz survey (see Axelrod Oral Testimony, pp. 11122, 11130-11134, 11223-25). The decision as to which mode of data collection to use is one that concerns tradeoffs between costs and potential errors. Each mode has its benefits and its limitations. Self-administered surveys such as those conducted via traditional mail or as web-based surveys benefit from allowing the respondent to read the material but are limited in that (1) one is never assured that the respondent fully reads any one question; (2) one cannot know with certainty who has served as the respondent; and (3) the lack of an interviewer forces the respondent to undertake the task by him/her self, with no means to seek clarification concerning a question or a response category. Interviewer-administered questions benefit from the presence of an interviewer—both to encourage overall response and to assist in the task—but the presence of an interviewer can also be detrimental in the measurement of socially desirable or undesirable behavior.
- 27. Indeed, the use of the telephone for the collection of survey data has been popular in the United States since the early 1970s and only recently has been in decline for general population surveys. However, for the Bortz and Horowitz surveys, we are not discussing general population surveys but rather a survey of business entities for which

⁹ I note that Alan Rubin in his Testimony of November, 1991 also asserted that the constant sum technique should only be used with "personal, face-to-face interviewing" (p. 7).

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telephone surveys are quite prevalent. Moreover, to assist respondents at CSOs who carried only WGNA distant signals, the Bortz methodology used for the 2010-2013 data collection included advance mailing of materials identifying the compensable and non-compensable programming on WGNA. In contrast, the Horowitz survey did not provide such materials. As a result, no clear delineation of compensable and non-compensable programs was articulated for respondents to the Horowitz survey for whom WGNA was the only distant signal carried.

- 28. Dr. Steckel also criticizes the use of telephone surveys for data collection, citing a paper by Dr. Joel Axelrod as "caution[ing] against using constant sum measures in a telephone interview" (p. 35). However, in prior proceedings Dr. Axelrod himself appeared as a witness, discussed that same paper, and testified that the use of telephone surveys was appropriate for the purpose of administering the constant sum question in the Bortz survey (see Axelrod Oral Testimony, pp. 11130-11134).
- 29. I note that Dr. Steckel incorrectly asserts that the unit of analysis of the Bortz and Horowitz surveys is the cable system executive and not the cable system. He states: "The data are collected and tabulated with the unit of analysis being the respondent cable system executive, not the cable system" (p. 25). While the *respondent* in each of the surveys is an executive, the *analytic unit* for each of the surveys is the cable system, with weights corresponding to copyright royalties paid by the system. Based on his comments, it appears that Dr. Steckel has not examined the data from either the Bortz or Horowitz data collection efforts. Dr. Steckel is incorrect in his assertion that estimates from the studies are biased in favor of small cable operators.

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30. In sum, I find the arguments put forth by Dr. Steckel to reiterate previous concerns expressed by experts for the Program Suppliers and which, in previous proceedings, have not been found to undermine either the methodology of or the estimates derived from the Bortz survey. I disagree with Dr. Steckel's assessment that the Bortz and Horowitz surveys focus on the wrong population to study; he asserts that the viewing public and not cable system executives should be the focus of study. Cable system executives are the relevant population to study for this task; in contrast to the viewing public, CSO executives are familiar with the concept of program valuations and utilize this information in contract negotiations. As such, there is no foundational support for Dr. Steckel's criticism that the constant sum question is "too complex."

IV. THE HOROWITZ SURVEY IS FUNDAMENTALLY FLAWED AND PROVIDES NEITHER A VALID NOR RELIABLE BASIS FOR ESTIMATING RELATIVE VALUE

- 31. The written direct testimony of Howard Horowitz summarizes the design and implementation of cable system operator surveys conducted by Horowitz Research for each of the years 2010-2013. The written direct testimony of Martin R. Frankel, Ph.D. provides information related to the sample design and estimation for the Horowitz surveys, 2010-2013.
- 32. The questionnaire and sample design of the Horowitz survey are similar in nature to those used by Bortz Media and Sports Group, Inc. Both surveys make use of a stratified random sample of Form 3 cable system operators, for which the strata are defined according to annual royalty amounts for the respective years. The mode of data collection is the same for the two studies—telephone—and the key question of interest, that is, program valuation, is based on a constant sum methodology. The survey questionnaire for both Bortz and Horowitz includes preliminary questions that measure

the respondent's perception of the importance of different types of program categories and introduces the respondent to the specific program categories of interest. The implementation of the two studies calls for both interviewers and respondents to be blinded to the respective sponsors of the data collection effort. And in the implementation of the two sets of studies, we see response rates that exceed the current norms in the industry.

- 33. However, there are significant differences in the two studies, and these differences are critical to understand in assessing the relative validity and reliability of the two sets of estimates for 2010-2013. The key design differences between the Bortz and Horowitz surveys include the following:
 - The misuse of illustrative programming examples and "such as" programming descriptions—including the provision of incorrect examples, incorrect descriptions and programs that were not broadcast on a compensable basis;
 - The failure to provide information identifying compensable programs on WGNA;
 - The addition of an inappropriate "other sports programming" category;
 - The consolidation of surveys in which a respondent was queried about multiple systems simultaneously; and
 - The unnecessary burden of requiring respondents to consider *all* of the distant signals carried by a cable system.

A. Misuse of Illustrative Examples and "Such As" Descriptions

34. The Horowitz survey's relative value question (Question 6) violates general principles of questionnaire design due to its misleading and inconsistent use of examples and "such as" descriptions across program categories. As discussed in Diamond's "Reference Guide on Survey Research," a fundamental requirement for a sound survey is that the questions must be "clear, precise and unbiased" (p. 387). Even an accurate example may inject bias into a survey question—for example by limiting respondents'

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consideration to those examples that are offered (Beatty, Cosenza, and Fowler, 2006), or by increasing the reported frequency for the response category (Tourangeau, Conrad, Couper, and Ye, 2014). And where a survey question uses an inaccurate or misleading example, that renders the question (of which the example is part) inherently imprecise and biased. If examples are meant to serve as a means to improve comprehension of a question or a response category, then it is imperative that the examples not be misleading. 35. Of the problems with the Horowitz survey's relative value question, the inclusion of incorrect information as part of the response category descriptions is the most egregious. The rebuttal testimony of James Trautman lists in detail numerous errors in the program examples and "such as" program descriptions provided to the Horowitz survey respondents, both with respect to all of the WGNA-only systems and systems that included only WGNA and public broadcasting, as well as many of the other systems (Written Rebuttal Testimony of James M. Trautman, pp. 18-28). These errors include providing the cable system respondents with examples and descriptions of programming that the cable systems did not actually carry, or that was not compensable, or that was attributed to the incorrect program category. As a result of these inaccuracies, the questions are biased and therefore the responses are not valid representations of valuations for the various program categories.

36. In addition to these errors, I also note that the descriptions of program categories are inconsistent across the categories. As shown in Appendix A of Horowitz, no examples are offered with respect to the category "News and Community Events," whereas a similarly self-explanatory category "Movies" offers six examples in addition to three movie sub-categories offered as part of the "such as" clause. The examples offered

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for the "Live, play-by-play coverage of professional and college team sports" are not examples but rather the full enumeration of the sports programs associated with this category. Sometimes a program category includes examples of sub-categories (through the use of "such as" descriptions) as well as specific program titles; for other program categories there are neither examples of sub-categories nor examples of specific program titles; and some program categories include only specific program examples.

- 37. These inconsistencies in the program category descriptions are significant. First, respondents give greater cognitive processing the longer the response category offered—so those categories that incorporate "such as" program subcategories and illustrative examples will benefit from greater cognitive processing by the respondent. The goal in designing response categories for a question is to minimize differences in the level of cognitive processing by the respondent across the various categories since differences in the level of processing may contribute to differences in responses. Second, frequency—or in this case, relative valuations—most likely are impacted by the use of examples. Thus, we would expect that valuations across categories could have differed, in part, as a result of the variation in language ("such as") and variation in the use of illustrative examples. So as to minimize the measurement error attributed to question wording, each of the program categories should have been treated equally with respect to the number of illustrative examples and the use of "such as" language.
- 38. Although the inconsistencies in the structure of the program categories most likely impacts the estimation for these respective categories, it is the presentation of misleading information included in the description of program categories that results in my assessment that the questions (and response categories) are biased.

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B. Failure to Identify Compensable WGNA Programming

- 39. Not only is the valuation question flawed due to what information is provided, the Horowitz questionnaire also suffers from errors of omission, specifically with respect to the identification of compensable programs for systems that carried WGNA. A key issue for signals that carry WGNA is for the respondent to understand which programs on WGNA are compensable and which are not. The Bortz surveys of WGNA-only systems addressed this issue by pre-mailing affected respondents a description of the compensable programs on WGNA every year, including the total number of hours of such programming (see Bortz, p. 30).
- 40. This feature of the Bortz surveys was new to the 2010-2013 data collection effort and addresses, in part, a concern raised by the CRJs as part of the distribution of the 2004-2005 cable royalty funds (Federal Register, Vol. 75, September 17, 2010, p. 57067). In contrast, the Horowitz survey merely instructed respondents with WGNA systems as follows: "Please do not assign any value to programs that are substituted for WGN's blacked out programming" (Horowitz, Appendix A, p. 36). Cable system operators, however, have no reason to know which programs on WGNA are or are not substituted for blacked-out programming of the local WGN-Chicago station (see Written Rebuttal Testimony of James M. Trautman, pp. 14-15; Written Rebuttal Testimony of Allan Singer, p. 8).
- 41. Of particular importance is the fact that all of the non-compensable programming on WGNA falls within the Program Suppliers and Devotional categories (Written

¹⁰ I note that the list of compensable programs and hours of airtime were only sent to those systems for which WGNA was their only distant signal. Systems for which WGNA was one of two or more distant signals did not receive this information.

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Rebuttal Testimony of James M. Trautman, p. 14). To the extent that the respondent does not fully understand and differentiate between compensable and non-compensable programs, the relative valuations for the Program Suppliers categories (movies, syndicated series, and "other" sports) as well as the Devotional category will be upwardly biased. Hence, I find that the methodology used by Bortz for WGNA-only (in which compensable programs were clearly delineated for the respondent) would lead me to conclude that for WGNA-only stations, the Bortz estimates would provide a more valid estimate of relative program valuations.¹¹

C. Addition of "Other Sports Programming" Category

42. Another key difference between the Bortz and Horowitz surveys is the inclusion of an "Other sports" program category in the Horowitz survey. Treating a category as minor as "other sports" in the same manner as program categories such as "movies" and "live professional and college sports" suggests to the respondent that the category is significant and on par with the other seven categories. I agree with Mr. Trautman's assessment that the provision of these misleading examples would lead to inflated estimates of the relative value of "other sports." For example, if we look at those systems that retransmitted WGNA as their only commercial distant signal during 2010-2013, we see responses in the Horowitz data that are illogical, given the fact that WGNA carried less than two hours each year of compensable "Other Sports" (Trautman Written Rebuttal Testimony, p. 17). For example, in 2013, one of the responding CSOs assigned relative

¹¹ I note that for those cable systems for which WGNA is one of two or more distant signals carried, neither Bortz nor Horowitz provided respondents with a list of compensable programs. For those "WGNA-plus" systems, the Bortz surveys provide a more valid estimate of relative program valuations than the Horowitz surveys due to the flaws in the Horowitz WGNA-plus surveys discussed herein, such as the use of misleading and inaccurate program examples and the inappropriate addition of an "Other Sports" category.

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valuations of '25' for both Live Team Sports and "Other Sports." Other examples include three responding CSOs that each valued Live Team Sports at '40' and "Other Sports" at '30' despite the fact that the only compensable "Other Sport" broadcast was a single one-hour horse race ("The Arlington Million") (Trautman Written Rebuttal Testimony, p. 17).

D. Respondent Selection

- 43. The Bortz and Horowitz data collection methodologies differed in their approach to identifying the respondent of interest and how interviews were conducted. For the Bortz study, interviewers sought to interview the individual "most responsible for programming carriage decisions" (Bortz, pp. 14-15). As noted by Bortz, "In attempting to reach this individual, the interviewer was frequently referred to a regional executive" (p. 15). As such, Bortz often began at the CSO level to identify the person responsible for programming and moved up to a regional executive when necessary. The Bortz approach of starting at the CSO level limited the number of cable systems for which a single executive served as a respondent to a maximum of eleven, with the average number of CSOs for which a respondent reported ranging between 2 (2011) and 2.4 (2010) and the modal number of responses being 1 (that is, most respondents only responded for one system) (Trautman Written Rebuttal Testimony, Table A-4). Moreover, when the same individual was selected to report on multiple cable systems, he or she was administered a separate questionnaire for each system so as to focus solely on a single cable system at a time.
- 44. The Horowitz survey methodology also calls for the selection of "the executive with the decision-making authority over the carriage of distant broadcast signals for each CSO in our sample" (Horowitz, p. 5). However, in contrast to the approach used by

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Bortz, the methodology used by Horowitz begins at the top of the decision making process, often at the MSO level. As a result, some respondents had significant response burden, being asked to report on an extremely large number of cable systems. For example, we see that in 2013 the AT&T MSO includes 60 CSOs in the universe of systems surveyed by Horowitz, and that a single executive was interviewed with respect to all 60 CSOs (Horowitz, Appendix B, p. 41). Focusing on the Horowitz sample systems, the number of cable systems for which a single executive provided data was as high as 38 (in 2013). Also in contrast to the Bortz methodology, in the Horowitz survey, when a single executive was responsible for multiple systems and each of those systems had the same distant channel lineup, then only a single survey was administered. (Horowitz, p. 8).

45. For these reasons, the Horowitz methodology places excessive burden on the selected respondent. For the Horowitz survey, an executive was asked to report not only about those cable systems selected for the sample, but also for all systems for which he or she was responsible in the *entire universe* of Form 3 cable systems that transmitted a distant signal (Horowitz, p. 8). As a result, you see the extremely high number of cable systems for which an individual had to respond evident in the tables of Appendix B of the Horowitz report. Rather than focus on those CSOs that form the basis for the estimation, a respondent had to evaluate a much larger set of CSOs to determine his or her program relative valuations. The task as posed in the Horowitz survey (asking a single individual respondent about many CSOs either in a single interview or across multiple interviews

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¹² JSC_2010_2013_Masked_withDistantStations_MSOchanges_13July2017.xlsx.

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for those cases with different distant signals) would lead respondents to make summary judgments concerning valuations.

- 46. These summary judgments, in the case of multiple CSOs with the same distant signal, will reflect valuations for *sampled* CSOs as well as *non-sampled* CSOs since Horowitz asked respondents to report on the universe of all CSOs.
- 47. The pooling of multiple CSOs with the same distant signal lineup into a single questionnaire assumes that the valuation for those distant signals is the same, regardless of the population being served by those distant signals. Consider, for example, the case of WGNA, a distant signal that is transmitted throughout the country. One can imagine that interest in the Chicago sports teams or Chicago-related news may be greater in some parts of the country than others. To group all of the WGNA systems together in requesting relative program valuations makes an assumption about the equality of valuations for every cable system that offers WGNA (among those reported for by the same respondent). Addressing multiple systems in a single survey meant the respondents had to somehow provide a single valuation for signals carried across a large number of systems that were likely geographically diverse.
- 48. In addition to the burden related to reporting for multiple CSOs in a single interview, the Horowitz survey differs from the Bortz methodology in that executives were queried about *all* distant signals transmitted by each of the cable systems. Based on the data provided by Horowitz, the number of distant signals associated with any one cable system ranged from one to over fifty; respondents would have been queried about all of the distant signals transmitted by their respective cable system. In contrast, Bortz

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limited the number of distant signals for which a respondent had to report to eight (Bortz, p. 33-36).

49. As a result of their data collection approach, the Horowitz data are populated by a relatively small number of respondents. Table 1 shows the number of CSOs, the number of respondents, and the concentration of CSO responses for the Horowitz data. See also Trautman Written Rebuttal Testimony, Table A-4.

Table 1. Number of CSOs, Respondents, and Measures of Respondent Concentration, by Year, Horowitz Data

	Number of	Number of	Number of	Percentage of	Percent of
	CSOs for	respondents	respondents	data	data
	which there	providing data	reporting for	accounted for	accounted
Year	are sample	for the CSOs	10+ CSOs	by the	for by the
	data	in Column 2		respondents in	top 2
				Column 4	respondents
2010	123	31	3	42.4%	32.6%
2011	182	43	4	37.8%	25.2%
2012	228	42	8	58.9%	26.8%
2013	200	41	7	62.0%	29.0%

Source: Trautman Written Rebuttal Testimony, Table A-4.

As is evident from the table, especially for 2012 and 2013, a small number of individuals account for a large percentage of the data. And, as is evident from the final column of Table 1, in each year, two respondents account for more than a quarter of the data. The concentration of data exhibited in Table 1 is detrimental for two reasons: (1) the observations in the data are clearly not independent and should not be treated as such in the calculation of means and standard errors; and (2) with only two respondents accounting for over 25% of the data each year, these individuals can have an undue influence on the final estimates.

50. According to the methodology described by Horowitz (p. 8), when cable systems offered the same mix of distant signals, executives were to be interviewed once

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concerning all of the similar CSOs. However, when I examine the data for a single respondent in a given year, I also find identical program valuations across CSOs with *varying* distant signals. For example, in 2013, looking only at the *sample* data used in estimation, respondent 54 (as identified in the Program Suppliers' data) provided information on 38 different cable systems. For 15 of these 38 cable systems, the program valuations were as follows:

News: 0% valuationSyndicated Series: 30%

Movies: 15%Live Sports: 5%Other Sports: 0%Devotional: 0%

• Public Television (PTV): 50%

• Canadian: No valuation

However, the distant signals carried by these 15 cable systems varies, with no two cable systems offering the same mix of distant signals. It is quite surprising that this executive produced the *exact same valuations* for each of these 15 cable systems carrying different line-ups—assuming that he or she was interviewed separately about each system. Nor is this an isolated example; I see the same pattern of identical valuations for executives required to report for multiple cable systems across all four years of data. These repeated identical responses regarding systems with non-identical signal lineups raise questions as to whether the survey protocol for separate questionnaires was in fact

 $^{^{13}\} JSC_2010_2013_Masked_with Distant Stations_MSO changes_13 July 2017.xlsx.$

¹⁴ The example provided above is with respect to the repetition seen among those cases identified as part of the Horowitz sample (used for estimation by Dr. Frankel). The pattern of identical reporting across cable systems is even more evident when one looks at the full universe of systems for which a single executive was asked to report.

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correctly implemented—or whether some respondents employed "short-cuts" in response to the burden of being asked to respond for numerous systems.

E. Summary of Horowitz Survey's Design Problems

- 51. The survey as designed and implemented by Dr. Horowitz and which forms the basis of the estimates provided by Dr. Frankel is fraught with problems. These problems include, but are not limited to:
 - The extensive use of misleading and incorrect examples in the program category descriptions as well as the inconsistent use of the "such as" program examples;
 - The failure to provide information identifying compensable programs on WGNA;
 - The addition of an inappropriate "other sports programming" category;
 - The consolidation of surveys in which a respondent was queried about multiple systems simultaneously; and
 - The implementation of a data collection methodology that was excessively burdensome in that it requested respondents to report not only on sampled cable systems but all cable systems as well as reporting for *all* distant signals associated with each of the cable systems.

The extent of the misinformation provided as examples or as subcategories of programs ("such as") in the program category descriptions and the inconsistent use of examples and subcategories raises serious questions as to the validity of the responses and resulting estimates of program category valuations. Diamond (2011) notes that "[w]hen unclear questions are included in a survey, they may threaten the validity of the survey by systematically distorting responses if respondents are misled in a particular direction, or by inflating random error if respondents guess because they do not understand the

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question" (p. 388). In this case, I believe that the provision of misinformation (exacerbated by the failure to provide information related to compensable programming) is sufficiently egregious as to reject the estimates of relative valuations resulting from the Horowitz survey. As a result of the issues I have outlined above, the Horowitz data provide neither a valid or reliable basis on which to estimate program valuations.

F. Data Adjustments

- 52. For those cable systems for which PBS was the only distant signal, the Horowitz questionnaire asks the following: "Considering the value of the programs broadcast only on PBS station (INSERT PBS STATIONS) to your cable system, what percentage, if any, of the fixed dollar amount would you allocate for this type of programming" (Horowitz, Appendix A, p. 36). PBS-only cable system executives were not instructed that the value of their estimate needed to add to 100%.
- 53. The question, as posed, is confusing, because how is an executive to value a program category relative to other categories if the cable system only offers programming in a single category, in this case, PBS? Regardless, the questionnaire does allow respondents to provide answers less than 100%. Such answers are clearly evident in the Horowitz survey responses. There are several cases for which PTV-only systems reported valuations less than 100% for the PTV category. For example, in 2012, the relative program valuations for the 20 PTV-only systems range from 2% to 75%. However, it appears that Dr. Frankel adjusted these values to equal 100% (see, for

¹⁵ See JSC_2010_2013_Masked_withDistantStations_MSOchanges_13July2017.xlsx. In 2010, 3 of the 15 (20%) of the PTV-only cable systems had valuations less than 100%; in 2011, 28 of the 28 (100%) of the PTV-only cable system had valuations less than 100%; in 2012, 20 of the 20 (100%) PTV-only cable systems had valuations less than 100%; and in 2013, 20 of the 20 (100%) of the PTV-only stations had valuations less than 100%.

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example, the "reproportion" line of code in MPAA_2012.f90). Dr. Frankel provides no justification for altering the reported valuation.

G. Comparison of Statistical Estimates

- 54. The CRJs have in prior distribution orders cited the importance of focusing on confidence intervals around an estimate as opposed to strict adherence to the point estimates (Federal Register, Vol. 75, September 17, 2010, pp. 57066, 57068). Table IV-2 of the Bortz report provides 95% confidence intervals for the seven program categories used in the Bortz survey.
- 55. Dr. Frankel in his written direct testimony provides standard errors for the estimates derived from the Horowitz survey, rather than 95% confidence intervals. In order to provide an apples-to-apples comparison of the two sets of estimates, I have set forth below the point estimates, the margin of error¹⁶, and the 95% confidence intervals for the Horowitz-based surveys, along with the 95% confidence intervals produced in Table IV-2 of the Bortz report.

 $^{^{16}}$ Margin of error = standard error of the estimate x 1.96, where 1.96 is the value corresponding to an alpha level of .05, that is, a 95% confidence level.

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Table 2. Point Estimates, Margin of Error and 95% Confidence Intervals for Distant Signal Programming Valuation, by Programming Type, Survey Organization, and Year (95% confidence interval in parentheses)

	Bortz	Horowitz
2010		
Live professional and college team	40.9% ±1.6%	31.9 ±4.25
sports	(39.3% - 42.5%)	(27.7% - 36.2%)
Other sports	N/A	$6.8\% \pm 1.3\%$
_		(5.5% - 8.0%)
News and public affairs	$18.7\% \pm 1.2\%$	12.4% ±2.9%
_	(17.5% - 19.9%)	(9.5% - 15.3%)
Movies	$15.9\% \pm 0.7\%$	$17.2\% \pm 2.3\%$
	(15.2%-16.6%)	(14.9% - 19.4%)
Syndicated shows, series and	$16.0\% \pm 1.0\%$	$20.3\% \pm 3.3\%$
specials	(15.0%-16.9%)	(16.9% - 23.6%)
PBS and all other programming on	$4.4\% \pm 0.9\%$	$7.7\% \pm 3.3\%$
non-commercial signals	(3.6%-5.3%)	(4.4% - 11.0%)
Devotional and religious	$4.0\% \pm 0.4\%$	3.8% ±1.5%
programming	$(3.6\% \pm 4.4\%)$	(2.3% - 5.3%)
All programming on Canadian	$0.1\% \pm 0.1\%$	$0.0\% \pm 0.0\%$
signals	(0.0% - 0.2%)	(0.0% - 0.0%)
2011		
Live professional and college team	$36.4\% \pm 1.4\%$	$27.1\% \pm 3.0\%$
sports	(34.9% - 37.8%)	(24.1% - 30.1%)
Other sports	N/A	$10.8\% \pm 1.6\%$
		(9.3% - 12.3%)
News and public affairs	$18.3\% \pm 1.2\%$	$12.9\% \pm 2.0\%$
	(17.1% - 19.6%)	(10.9% - 14.8%)
Movies	$18.6\% \pm 0.9\%$	$11.4\% \pm 1.6\%$
	(17.7% - 19.5%)	(9.9% - 13.0%)
Syndicated shows, series and	$17.4\% \pm 1.0\%$)	$17.6\% \pm 2.1\%$
specials	(16.3% - 18.4%)	(15.5% - 19.7%)
PBS and all other programming on	4.7% ±0.9%	$13.3\% \pm 3.3\%$
non-commercial signals	(3.9% - 5.6%)	(10.1% - 16.6%)
Devotional and religious	$4.5\% \pm 0.4\%$	$5.9\% \pm 1.3\%$
programming	(4.1% - 4.9%)	(4.6% - 7.2%)
All programming on Canadian	$0.2\% \pm 0.1\%$	$1.0\% \pm 1.7\%$
signals	(0.0% - 0.3%)	(0.0% - 2.7%)

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2012		
Live professional and college team	$37.9\% \pm 1.8\%$	$25.5\% \pm 2.9\%$
sports	(36.1% - 39.7%)	(22.6% - 28.4%)
Other sports	N/A	$9.0\% \pm 1.3\%$
_		(7.7% - 10.3%)
News and public affairs	$22.8\% \pm 1.0\%$	$15.7\% \pm 1.7\%$
-	(21.8% - 23.8%)	(14.0% - 17.4%)
Movies	15.3% ±0.8%	12.1% ± 1.4%
	(14.5% - 16.1%)	(10.7% - 13.6%)
Syndicated shows, series and	$13.5\% \pm 0.6\%$	$16.0\% \pm 2.0\%$
specials	(12.9% - 14.1%)	(14.0% - 18.0%)
PBS and all other programming on	$5.1\% \pm 0.8\%$	15.1% ± 3.6%
non-commercial signals	(4.3% - 5.9%)	11.5% - 18.6%
Devotional and religious	$4.8\% \pm 0.4\%$	$5.7\% \pm 0.8\%$
programming	(4.4% - 5.2%)	(5.0% - 6.5%)
All programming on Canadian	$0.6\% \pm 0.6\%$	$0.9\% \pm 0.7\%$
signals	(0.1% - 1.2%)	(0.2% - 1.6%)
2013		
Live professional and college team	$37.7\% \pm 1.2\%$	35.3% ±9.5%
sports	(36.4% - 38.9%)	(25.8% - 44.8%)
Other sports	N/A	$7.4\% \pm 1.5\%$
		(5.9% - 8.9%)
News and public affairs	$22.7\% \pm 1.0\%$	$9.5\% \pm 2.0\%$
	(21.7% - 23.6%)	(7.6% - 11.5%)
Movies	$15.5\% \pm 0.8\%$	$12.4\% \pm 2.5\%$
	(14.7% - 16.2%)	(9.9% - 14.9%)
Syndicated shows, series and	$11.8\% \pm 0.7\%$	$16.3\% \pm 3.1\%$
specials	(11.0% - 12.5%)	(13.1% - 19.4%)
PBS and all other programming on	$6.2\% \pm 0.8\%$	$15.4\% \pm 6.6\%$
non-commercial signals	(5.4% - 7.0%)	(8.8% - 22.0%)
Devotional and religious	$5.1\% \pm 0.3\%$	$3.5\% \pm 0.9\%$
programming	(4.8% - 5.4%)	(2.6% - 4.3%)
All programming on Canadian	$1.2\% \pm 0.9\%$	$0.4\% \pm 0.3\%$
signals	(0.4% - 2.1%)	(0.1% - 0.6%)

Note: Data sources for Table 2 include Direct Testimony of Martin R. Frankel, Tables 5-8 (pp. 8 and 9) for the Horowitz column and Tables IV-1 (p. 42), IV-2 (p. 44), and Appendix D (pp. D-8 through D-11) for the Bortz column. Computation of margin of error and the 95% confidence interval for the Horowitz data computed by N. Mathiowetz based on the standard errors presented by Dr. Frankel. All estimates rounded to one significant digit. In 2010, the Horowitz estimate for all programming on Canadian Signals was 0.01% which rounds to 0.0% as presented in this table.

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56. Looking only at the data for 2013 (for illustrative purposes), we see significant differences in the valuations for news and public affairs, syndicated shows, series, and specials, PTV, and devotional programming. The wider confidence intervals seen in the Horowitz-produced data renders several of the comparisons non-significant. For example, looking at live professional and college team sports for 2013, the 95% confidence interval produced from the Bortz data is 36.4% to 38.9%—a spread of \pm 1.2 percentage points—whereas the interval produced from the Horowitz data is 25.8% to 44.8%—a spread of \pm 9.5 percentage points.

V. THE FORD/RINGOLD SURVEY DOES NOT PROVIDE A RELIABLE BASIS FOR ALLOCATING RELATIVE VALUE TO CANADIAN PROGRAMMING

- 57. The written direct testimony of Debra J. Ringold summarizes the methodology and estimates resulting from the Ford/Ringold survey of U.S. cable system operators who retransmitted Canadian television stations as distant signals in 2010 through 2013. The Ford/Ringold survey design is similar to that used by Bortz and Horowitz in which a sample of cable system operators are interviewed about the relative value the operator would assign to categories of programs using a constant sum methodology. However, there are significant differences with respect to the sample design and the precision of the estimates between the Ford/Ringold survey and the Bortz survey.
- 58. The Ford/Ringold design indicates that CSOs were interviewed about "one Canadian signal randomly chosen from those Canadian signals retransmitted" (CCG-6, p. 4) but no information is provided as to how the signal was selected. It appears that the sample design of for the Ford/Ringold survey gave preference to French-language signals ("If cable systems were found to retransmit both an English-language and French-

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language Canadian signal, the system was interviewed with the French-language version of the questionnaire, due to the smaller number of French-language systems" CCG-6, p. 6). As a result of this preference, the resulting analytic sample over-represents French-language systems. Whereas French-language stations accounted for about 21% of distant subscriber instances in 2013 (see CCG-1, Table 1 and Table 2, pp. 2-3, 5), the composition of the Ford/Ringold analytic sample consists of between 36% to 55% French-Language systems (computation based on data provided in CCG-6, Table 5 and CCG-6, Table 6). 17

- 59. Diamond (2011) asks, "Does the sample approximate the relevant characteristics of the population?" In the case of the Ford/Ringold sample design, the analytic sample clearly over-represents a segment of the population, that is the French-language stations.
- 60. Diamond (2011) also notes that "all sample surveys produce estimates of population values, not exact measures of those values" (p. 381). One factor that affects the margin of error around a survey estimate is the size of the analytic sample. In the case of the study completed by Drs. Ford and Ringold, the sample sizes are extremely small, leading to large 95% confidence intervals for those estimates. Listed below are the estimates for the average value of the programming reported by Drs. Ford and Ringold in Table 1 (CCG-6, p. 15) for the "live professional and college team sports" category. Table 3 includes my computation of the standard errors as well as the 95% confidence interval of the estimates, under the assumption of a simple random sample.

¹⁷ Specifically for 2010-2013, the proportion of French-Language Canadian Signals in the Ford/Ringold analytic sample is 38% (8 of 21), 44% (8 of 18), 36% (5 of 14) and 55% (6 of 11), respectively.

Table 3. Average Value of Live Professional and College Team Sports Shown on Canadian Signals with Standard Errors and 95% Confidence Intervals

Year	Estimate produced by Drs. Ford and Ringold (Table 1) (Sample size in parentheses)	Standard Deviation produced by Drs. Ford and Ringold (Table 1)	Standard Error of the Estimate	95% Confidence Interval (based on the standard error of the estimate)
2010	26.67 (21)	18.05	3.94	18.45 to 34.88
2011	14.72** (18)	9.92**	2.35**	10.14 to 19.30**
2012	21.07 (14)	21.23	5.67	8.81 to 33.33
2013	20.91 (11)	17.72	5.34	9.01 to 32.83

^{**} My analysis of the Ford/Ringold data indicates that for 2011, the average value of live professional and college team sports is 15.52 with a standard deviation of 10.26, a standard error of 2.34 and a 95% confidence interval of 10.58 to 20.47

61. Two points of interest. First, Drs. Ford and Ringold produced standard deviations of the estimates, not standard errors. A standard deviation measures the dispersion of a set of data whereas a standard error is a measure of the reliability of an estimate. The two measures are related in that the standard error of an estimate is equal to the standard deviation of the estimate divided by the square root of the sample size. The 95% confidence interval, as described by Diamond (2011) "means that if 100 samples of the same size were drawn, the confidence interval expected for at least 95 of the samples would be expected to include the true population value" (p. 381). It does not mean that one is 95% confident that the true population value falls within the range provided. Second, in contrast to the Bortz survey, we see that the small sample size for the

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Ford/Ringold survey leads to highly unreliable estimates (that is, wide confidence intervals).

- 62. The over-representation of French-speaking channels, coupled with the unreliable estimates, render the data from the Ford/Ringold study to be of little to no utility with respect to the issue of relative market value of Canadian programming on Canadian distant signals retransmitted by cable system operators in the United States.
- 63. Beyond the problems outlined above, a secondary issue with respect to the report of Drs. Ford and Ringold is the production of importance estimates for programming on TBS, U.S. superstations, and U.S. independent stations. Drs. Ford and Ringold note that the assessment of the relative importance of programming on these stations was conducted "to reduce the chances that respondents would guess the survey purpose or sponsor" (CCG-6, p. 4). Although I am supportive of the goal of masking the survey's purpose and sponsorship to respondents, the introduction of program categories that differ from those related to the primary purpose of the study adds unnecessarily to the cognitive burden of the respondents. Rather than simply reporting on the one constant sum question of interest before the CRJs, respondents to the Ford/Ringold survey were queried with respect to (up to) three different sets of program categories. This additional burden was unnecessary and may have led to confusion on the part of the respondents when reporting on the key question of interest, the relative programming value for Signal B stations.
- 64. Grouping together superstations such as WGN and WPIX with the cable network TBS likely led to additional confusion. Apart from the fact that TBS is not a distant signal, several of the program categories included in the constant sum question for

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Signal A cable systems are irrelevant to TBS (news, children's programming, and devotional categories). Asking respondents to report on the relative value of programming that is not even offered would most likely further confuse respondents. According to the data produced by Drs. Ford and Ringold, of the 42 times that respondents were queried about a "superstation," 68.9% of the respondents were answering the questions with respect to TBS.

65. Similar to the estimates for the Canadian distant signals, the estimates for superstations (Table 2, CCG-6, p. 16) and independent stations (Table 3, CCG-6, p. 17) are based on very small sample sizes and are therefore subject to wide confidence intervals (unreliable estimates). Table 4 provides the standard errors and 95% confidence intervals for the live professional and college team sports based on the means and standard deviations produced by Drs. Ford and Ringold.

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Table 4. Average Value of Live Professional and College Team Sports Shown on "superstations" and independent stations with Standard Errors and 95% Confidence Intervals

Year	Estimate produced by Drs. Ford and Ringold (Table 2 or 3) (Sample size in parentheses)	Standard Deviation produced by Drs. Ford and Ringold (Table 2 or 3)	Standard Error of the Estimate	95% Confidence Interval (based on the standard error of the estimate)
	Super	station Estim	nates	
2010	35.00 (19)	20.75	4.76	25.67 to 44.33
2011	26.76 (17)	11.58	2.81	21.26 to 32.26
2012	19.64 (14)	12.32	3.29	13.19 to 26.09
2013	23.50 (10)	16.17	5.11	13.48 to 33.52
	Indep	endent Estim	ates	
2010	16.25 (4)	17.97	8.99	-1.37 to 33.87
2011	25.00 (5)	16.58	7.41	10.47 to 39.53
2012	24.00 (5)	4.18	1.87	20.33 to 27.66
2013	31.67 (3)	14.43	8.33	15.34 to 48.00

Note: Standard errors and confidence intervals produced for comparison purposes only. It is my usual practice to not produce estimates or confidence intervals when the number of observations within a cell is below n=20.

Similar to the estimates of Canadian distant signals, the unreliability of the estimates renders them uninformative with respect to understanding program valuations for superstations and independent stations.

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I declare under penalty of perjury that the foregoing is true and correct.

Executed on __ September 14, 2017.

Nancy A. Mathiowetz, Ph.D.

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

)	
In the Matter of)	
)	
Distribution of the)	Docket No. 2007-3 CRB CD 2004-2005
2004 and 2005)	
Cable Royalty Funds)	
)	

Testimony of Judith Meyka

June 1, 2009

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I. INTRODUCTION AND SUMMARY

- 1. My name is Judith Meyka and I have over 15 years of experience in the cable television industry, including experience as an executive responsible for the valuation and acquisition of television programming for major cable MSOs (multiple system operators). I am submitting this testimony to the Copyright Royalty Judges on behalf of the Joint Sports Claimants ("JSC") in connection with the 2004-2005 Cable Royalty Distribution Proceeding.
- 2. I understand that this proceeding involves the distribution of the compulsory licensing royalties paid by cable operators to distribute non-network programming on distant signals during the years 2004 and 2005. I further understand that the goal in distributing these royalties among the copyright owners of the programming is to allocate the royalties so that each group of copyright owners receives, as a percentage, what it would have received in a free marketplace if there were no compulsory license. This means that there must be a relative value assigned to each category of distant signal programming, i.e., live professional and collegiate team sports, movies, syndicated programs, news and public affairs programs, public television programming, Canadian programming and devotional programming.
- 3. At the request of JSC, I have reviewed the report of Bortz Media & Sports Group, Inc. ("Bortz") entitled "Cable Operator Valuation of Distant Signal Non-Network Programming: 2004-05," dated June 1, 2009 (JSC 04-05 Ex. 1). That Report discusses the results of two constant sum surveys in which a random sample of cable operators were asked to value the different types of programming on the distant signals they carried

during the years 2004 and 2005, respectively. The purpose of my testimony is to assess those results in light of my experience in the cable industry.

4. As explained more fully below, I believe the Bortz survey results are consistent with my experience as a cable industry programming executive. In particular, I agree that live professional and collegiate sports programming is, and was during 2004-2005, the most valuable type of non-network programming on distant signals. In a marketplace absent compulsory licensing, cable operators likely would have allocated no less than 33-37% of their distant signal non-network programming budget to acquire that programming, as reflected in the Bortz survey results. I also agree, as set forth in the Bortz survey results, that there were no changes in the marketplace between the years 1998-1999 and 2004-2005 that would have significantly affected the relative market values of sports and the other categories of non-network programming on distant signals.

II. QUALIFICATIONS

- 5. I became involved in the cable industry in 1992 after I joined the law firm of Ballard Spahr Andrews & Ingersoll. As an associate attorney, I acted as counsel to the programming group Tele-Communications, Inc. ("TCI"), then the largest and most influential MSO in the country. My work with TCI included participation in the negotiation of retransmission consent agreements with broadcast television stations entered into as a result of the implementation of the 1992 Cable Act and the negotiation of cable network distribution agreements.
- 6. In 1998, I became Vice President of Programming for MediaOne, then a major MSO with over five million subscribers. In 2000, AT&T Broadband acquired MediaOne and I remained with the company in the same position. AT&T Broadband had

previously acquired TCI and had become the largest MSO in the country. My responsibilities with both companies included securing distribution rights for cable television programming. I also supervised the acquisition of international programming content and participated in the development of advanced products such as video on demand.

- 7. In 2002, Comcast acquired AT&T Broadband. I then took a position as Senior Vice President of Distribution with iNDemand, a pay-per-view and on demand movie and sports distribution entity owned by several MSOs including Comcast and Time Warner Cable. I was responsible for all matters related to the distribution of the programming content offered by iNDemand to the various cable operators.
- 8. In 2003, I accepted a position with Adelphia Communications to lead its programming group as Senior Vice President of Programming. At the time, Adelphia was the fifth largest cable operator with over five million subscribers located throughout 31 states. I was responsible for acquiring and managing distribution rights for programming valued in excess of \$1 billion annually. I coordinated programming efforts with the company's five regional divisions and oversaw the composition of all channel line-ups. It was my responsibility to develop and implement programming strategies that most effectively promoted the growth of the subscriber base and the rollout of advanced distribution platforms.
- 9. I remained at Adelphia until August 2006 when the company was sold to Comcast and Time Warner Cable. Since that time, I have worked as an independent consultant providing guidance and advice to cable industry clients including television content providers and new and established programming distribution companies.

10. Throughout my career in the cable industry, I have been closely involved with video programming (including distant signal programming) and the myriad issues relating to the purchase and distribution of this content. I have negotiated hundreds of cable programming distribution agreements and broadcast retransmission consent agreements. My responsibilities have required me to develop an understanding of, and appreciation for, the variety of available programming, the value of various program offerings and the financial ramifications for securing different types of programming.

III. DETERMINANTS OF MARKET VALUE

- 11. Subscribers are the lifeblood of the cable operator because without them, there is no business. Subscribers can be gained or lost based on the programming offered to them by a distributor. Cable operators, therefore, must constantly assess the value of the programming they include within a channel line-up to ensure maximum subscriber satisfaction. The value of any particular programming to a cable operator is derived from the perceived value of such programming to the subscriber. The higher the perceived value to the subscriber, the more potential such programming has to attract and retain such subscribers.
- 12. The cable industry is a competitive marketplace with cable operators competing against other distributors for fee-paying subscribers. The objective for any distributor is to provide programming options that will result in maximum subscriber growth and minimal loss of existing subscribers. While other factors may ultimately influence a decision of whether or not to carry a particular channel, the type of programming on that channel is of paramount importance. This is particularly true of distant signals carried pursuant to the compulsory licensing provisions of Section 111 of

the Copyright Act. By law, a cable operator may not insert local advertising spots within a distant signal and, thus, there is no opportunity to receive advertising revenue to offset any of the cost of the channel. Including a distant signal on a channel line-up must bring value to that line-up by increasing its attractiveness to subscribers. MSOs carry distant signals based solely on the value of the programming on the signal and the potential impact of the signal on subscriber numbers.

IV. THE BORTZ SURVEY

13. I understand that the Bortz survey of cable operators is conducted each year to determine the relative value cable operators place on the various types of non-network programming transmitted by distant signals. The results of the 2004 and 2005 surveys as set forth in Table I-1 of the Bortz Report are as follows:

Table I-1.

Distant Signal Programming Valuation Studies, 2004-05

	2004	2005
Live professional and college team sports	33.5%	36.9%
Movies	17.8	19.2
Syndicated shows, series and specials	18.7	184
News and public affairs programs	18.4	148
Devotional and religious programming	7.8	66
PBS and all other programming on non-commercial signals	3.5	37
All programming on Canadian signals	0.2	0.3
Tdd*	100.0%	100.0%

^{*}Columns may not additionable due to rounding.

14. The 2004-2005 Bortz survey results are similar to those reflected in the 1998-1999 Bortz surveys. A comparison of the results of the 1998-1999 and 2004-2005 surveys are shown in Table I-2 of the Bortz Report as set forth below:

Table I-2.

Comparison of Distant Signal Programming Valuation Studies,
1998-1999 and 2004-2005

1550-1555 and 2004-2005					
	1998	1999	2004	2005	
Live professional and college team sports	37.0%	38.8%	33.5%	36.9%	
Movies	21.9	22.0	17.8	19.2	
Syndicated shows, series and specials	17.8	15.8	18.7	18.4	
News and public affairs programs	14.8	14.7	18.4	14.8	
Devotional and religious programming	5.3	5.7	7.8	6.6	
PBS and all other programming on non-commercial signals	2.9	2.9	3.5	3.7	
All programming on Canadian signals	0.4	0.2	0.2	0.3	
Total*	100.0%	100.0%	100.0%	100.0%	

^{*}Columns may not add to total due to rounding.

- 15. As discussed above, the value of any particular category of distant signal programming is directly related to the ability of the programming to attract and retain subscribers. Each cable operator, given the particular circumstances of its system, is likely to value the various categories of programming differently. Based on my experience in the cable television industry, however, I believe the Bortz survey results provide an accurate assessment of how the cable industry as a whole would have allocated its distant signal royalty payments for the years 2004 and 2005.
- 16. I further believe that the general consistency between the 1998-1999 and 2004-2005 survey results accurately reflects the fact that there were no changes in the marketplace during this period that would have significantly affected the relative values of the different categories of programming on distant signals. This is not to say that the cable industry remained static during such period. The cable industry continually goes through shifts and changes. From 1998 to 2005 there were several large mergers or

acquisitions of cable companies which resulted in increased consolidation within the industry and a smaller number of total cable operators controlling a larger portion of the total cable subscriber universe. Further, there was a significant advancement of new distribution technologies during this time period. It was an important growth phase for the deployment of the "on-demand" platform which provided subscribers with a selection of thousands of hours of programming to watch at a time of their choosing. It was also a time of increased distribution and utilization of the digital video recorder (DVR), a technological advancement over the VCR, which allowed a subscriber to record any television program for time-shifted viewing. These innovations were of great importance to the overall growth of the cable industry, but they did not, in my opinion, significantly affect the *relative* values that the industry as a whole ascribed to the different categories of non-network programming on distant signals.

A. Sports Programming

- 17. The Bortz surveys show that cable operators valued live sports programming more than any other category of distant signal programming. In 2004, they would have allocated 33.5% of their distant signal programming budget to live sports programming and, in 2005, they would have allocated 36.9% of that budget. These results are generally consistent with my experience; indeed, I believe they represent a conservative estimate of the relative amounts that cable operators would have paid for the live non-network sports programming on distant signals during the years 2004 and 2005.
- 18. Other witnesses with substantial cable industry experience have appeared in prior cable royalty distribution proceedings to explain why the cable industry values

sports programming so highly. I have reviewed the written testimony of the following witnesses:

- June Travis, the former Executive Vice President, Chief Operating
 Officer and Board member of the National Cable and
 Telecommunications Association ("NCTA"), an executive at what had
 been the nation's largest MSO and Chief Operating Officer of a
 medium-sized MSO. See JSC 04-05 Ex. 14
- Judith Allen, a marketing and programming executive with a major cable network and two large MSOs. See JSC 04-05 Ex. 15
- Michael Egan, co-owner of a small MSO and programming executive at a large MSO. See JSC 04-04 Ex. 16
- Jerry Maglio, a marketing and programming executive with a small MSO and what was at the time the third largest MSO. See JSC 04-05
 Ex. 17
- Trygve Myhren, President of a small MSO and former Chairman and CEO of a mid-sized MSO. See JSC 04-05 Ex 18
- James P. Mooney, President and CEO of the NCTA. See JSC 04-05
 Ex. 19
- Robert Wussler, the former CEO of Superstation WTBS. See JSC 04-05 Ex. 20
- Roger Werner, the former CEO of ESPN, Inc. See JSC 04-05 Ex. 21
- 19. I agree with the statements made by these witnesses concerning the value of live sports programming to the cable operator. I also believe that the reasons given by

these witnesses as to why live sports programming is valued so highly by cable operators are still relevant and equally applicable to the period 2004-2005.

- 20. It has long been the case that live sports programming is the most expensive programming purchased by cable operators. It is considered "must-have" marquee programming necessary to attract new subscribers and keep existing subscribers satisfied. Live sports programming was the primary driver of the increase in cable penetration in the 1990s and continues to be the focus of the competition for subscribers between cable operators and satellite television distributors.
- 21. Sports are an important and integral part of our culture and society. Fans will often schedule their lives around a live televised sporting event. It is the most unique programming offered by a cable operator in that it is live, non-repeat programming presented in real time and generally available on only one outlet (i.e., one network or channel). Unlike other types of programming, it is one-of-a-kind. You cannot substitute one game for another, one team for another or one sport for another. A passionate sports fan is willing to spend money to watch his or her team play and is not hesitant to switch out video providers if one is not able to make that happen. For the cable operator, this means that sports programming plays a significant role in the composition of a channel line-up and in the successful acquisition and retention of subscribers.
- 22. Sports fans are also the most vocal and passionate when it comes to their desired sports programming. They are intensely loyal to their teams whether they themselves are local to that team or they are a "displaced" fan located in another city looking for access to their teams' events. They may not subscribe to a cable operator's services if particular sports programming is not available and they are the first to respond

or voice an opinion if a channel with sports programming is dropped or is even believed to be at risk of being dropped from an operator's line-up. Because of its importance to a sports enthusiast, a cable system's decision to drop a channel with popular sports programming can and does result in the loss of subscribers and thus a loss of revenue.

23. In the years 2004 and 2005, the most significant distant signal was Superstation WGN, a Chicago TV station. At that time, WGN was carried by approximately 72% of all Form 3 systems which carried a distant signal. In fact, during this period, the royalties paid to carry WGN represented approximately 63% to 65% of all royalties paid by all Form 3 systems to carry distant signals. In terms of its ability to attract and retain subscribers, the sports programming on WGN, which included the Major League Baseball telecasts of the Cubs and White Sox and the National Basketball Association telecasts of the Chicago Bulls, was the most valuable programming that WGN offered to cable operators. In some cases and on certain channel line-ups, WGN was a staple that had been carried for many years and was well known to subscribers as "home" to the above-mentioned sports programming. The live sports programming on WGN provided popular programming not available elsewhere and brought great value to the cable operator's subscriber offering. For the cable operator, carrying live sports programming on WGN enhanced the value and appeal of a channel line-up resulting in increased subscriber satisfaction.

24. It was during 2004-2005, while at Adelphia, that I had the opportunity to meet with WGN representatives to discuss their request for additional launches of the signal beyond the markets where it was already carried. The conversation was focused

2 Id.

¹ Source: Cable Data Corporation (JSC 04-05 Ex. 22).

on increasing the availability of the live sports programming carried on WGN to more subscribers and the value the addition of that programming would bring to a channel line-up. The primary reason to launch WGN was to bring unique, desired programming in the form of live sports programming to a market because it had the greatest impact on increasing subscriber satisfaction and ultimately attracting new subscribers or keeping existing subscribers.

25. Other than WGN, the majority of distant signals carried by cable operators during the years 2004-2005 were local or regional distant signals imported into a nearby cable system. These channels were included within a line-up to provide popular regional sports programming or local interest or news programming from a larger market or neighboring state. Again, there was value to the cable operator in being able to offer programming that was unavailable elsewhere and had a particular significance to the subscriber. Sports programming shown on regionally-available distant signals also provided the cable operator with a strong vehicle to support subscriber acquisition and retention campaigns and ultimately the growth of subscriber numbers.

B. Other Programming

26. As set forth in Table I-1 above, the Bortz surveys show that cable operators, in 2004 and 2005, would have allocated somewhere between 15-19% of their distant signal programming budget to each of the categories of movies, syndicated programming and news and local affairs programming. Other categories such as public television, devotional programming and Canadian programming received much smaller allocations -- although the smaller allocations for public television and Canadian programming are at least partially attributable to the fact that a relatively smaller number

of cable systems carry such programming on a distant signal basis. These results generally align with my beliefs as to how the cable industry would have allocated its total distant signal programming budget for the years 2004 and 2005. I would add, however, that it is possible that a cable operator in a system without a local public television programming station might place a higher value on that category of programming because of the nature of the content in that it is generally unavailable elsewhere and includes popular programs (such as certain children's shows) that are readily recognized by a subscriber.

27. As previously expressed, subscriber satisfaction is key to growing and retaining subscribers. Subscriber satisfaction comes from offering customers a mix and blend of programming that fulfills their desires for video programming and produces the greatest subscriber demand. News and local interest programming, public television programming, movies and syndicated programming are all a part of that mix. Live sports programming, local news and public affairs programming and public television programming are particularly important components of the offering because they bring unique content that may not be available on other channels in the line-up.³ By contrast, movies and syndicated programs are more readily available elsewhere and fungible with other similar programming and thus are not as effective in attracting and retaining subscribers for the cable operator.

³ To a lesser extent, devotional and Canadian programming may also add a unique element to the programming mix that might otherwise be unavailable to a cable operator.

I declare under the penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Judith Meyka Dune 1, 2009

Judith Meyka

TESTIMONY OF JAMES P. MOONEY ON BEHALF OF THE JOINT SPORTS CLAIMANTS IN THE 1990-1992 CABLE ROYALTY DISTRIBUTION PROCEEDING AUGUST 1995

Qualifications

I served as the President and Chief Executive Officer of the National Cable Television Association ("NCTA") from July 1984 through June 1993. NCTA is the principal trade association of the cable television industry. During my tenure as President and CEO, the NCTA membership consisted of cable operators serving over 90% of the 57 million cable subscribing households in the United States, and over 60 nationally distributed cable programming networks. While at NCTA, I managed a staff of nearly one hundred employees and an annual budget of \$30 million. I also served as a member of the Association's board of directors and executive committee.

As spokesman for the cable industry, I had frequent contact with senior executives of virtually every major MSO and cable network (including various superstation interests). I was personally involved in intra-industry discussions and strategizing concerning, among other matters, the cable television compulsory license.

I represented the cable industry, both in negotiations with other parties and before the Congress, on a variety of issues, including the compulsory license.

Prior to becoming President and CEO of NCTA, I served for three years as the Association's Chief Operating Officer. Before that I served as Chief of Staff to the Majority Whip of the U.S. House of Representatives.

Summary

I understand that this proceeding involves allocation of the 1990-1992 royalty fees collected pursuant to Section 111 of the Copyright Act. I further understand that, in past proceedings, these royalties have been allocated among the copyright owners based upon the relative value of the programming. The Joint Sports Claimants have asked for my views concerning the value the cable industry placed on distant signal sports programming (as opposed to distant signal movies and syndicated shows) during the 1990-1992 period.

For the reasons set forth below, it is my opinion that cable operators value distant signals, including "superstations," principally for their telecasts of major league sporting events. Other programming features of the standard superstation lineup, i.e. movies and syndicated shows, are plentiful on cable basic networks. Consequently, absent major league sports, I believe the economic and political disadvantages of the compulsory license system would otherwise lead the cable industry to forego continued support of the license, insofar as it affects carriage of distant (as opposed to local) signals. The cable industry has continued to support the

compulsory license -- notwithstanding the political consequences of that action -- primarily to ensure continued access to the major sports events televised by superstations and other distant signals.

Background

Cable television began to take its modern form in the late-1970's, when technological advances made possible the construction of systems with large channel capacities at practicable cost. Thus, traditional 6 and 12 channel "community antenna" systems could be rebuilt with sufficient bandwidth to accommodate 24, 36 and even 42 channels, and for the first time cable seemed attractive outside of rural areas. Blue sky euphoria ran high. As *Newsweek* magazine somewhat breathlessly announced in 1981, "The wire is bringing in a flood of new programs -- and new technology that could transform the American home." (*Newsweek*, August 24, 1981, p.44.)

But the fact is that until the mid-1980's cable was a medium without its own message. Elaborate program creation and distribution infrastructures had long existed to serve the broadcast and theatrical movie industries, but, apart from local access channels and a premium channel business pioneered by Time, Inc.'s HBO, cable-specific programming trailed far behind the creation of cable distribution plant. Indeed, notwithstanding the launch of over 50 nationally distributed cable networks between 1978 and 1985, made-for-cable programming did not really begin to make a mark until after basic service rate deregulation took effect in 1986. Deregulation led

directly to increased programming expenditures, and, increased programming expenditures led directly to quality improvements that increased subscribership, viewership, and ad revenues for the cable networks.

One important exception must be made to this commentary, however, concerning the role in cable played by the out-of-market, or "distant" broadcast signal. In the absence of cable-specific programming, the engine that drove cable subscriber penetration throughout the late 1970's and early 1980's was the distant signal, and in particular the "superstations." Whether overtly cable friendly, as in the case of Ted Turner's WTBS, or ostensibly involuntary, as in the case of WGN, WWOR and WPIX, the cable superstations provided the "added value" cable needed as it moved out of the rural areas and into suburban and urban settings.

The satellite delivered superstations (as well as other independent TV stations distributed regionally to cable systems by microwave), substantially increased the amount of syndicated shows, movies and sports available in a given television market, and, in effect, allowed the subscriber to bypass Federal regulatory policies which sharply limited the number of TV stations in most areas. Until the mid-1980's very few "independent" TV stations existed outside the top 50 markets. As a result of F.C.C. rules, the typical smaller market had no more than 3 stations, each of them an affiliate of one of the 3 major networks.

Cable in the 1990's: The Programming Revolution

The proliferation since the 1980's of new independent stations, the advent of the Fox network, and the maturation of cable as a video medium in its own right make the television universe of the 1970's seem a far away world, indeed. Since the late 1980's the typical American TV household has available to it several dozens of nationally distributed networks, including basic cable networks such as USA, TNT and the Family Channel which -- together with large parts of the schedules of networks such as A&E, Discovery, Lifetime, Nickelodeon and Bravo -- are frankly modeled on the "look" and program content of an independent broadcast station.

A look at the Washington, D.C. cable system's (D.C. Cablevision) lineup of channels -- which is typical in the industry -- illustrates the plenitude of syndicated programs and movies on cable basic networks, and the overall enormous number of programming choices available to basic subscribers as alternatives to the three traditional broadcast networks. During the week beginning July 16, 1995, subscribers to D.C. Cablevision's basic service tier could have chosen among more than 4 movies per evening shown among the 8 cable basic networks listed above, in addition to the back to back movie lineup on AMC, and the 4 evening movies available during the week on the 3 local independent broadcast stations. Comparable prime time figures for syndicated programs during the same week were an average of 14.6 hours of

¹ All program scheduling information of D.C. Cablevision in this and subsequent sections of this paper are taken from *The Washington Post*'s TV Week magazine covering the period July 16-22, 1995.

programming per evening on the 8 cable networks and 5.5 hours per evening on the local independent broadcast stations (excluding in all cases the schedules of NBC, ABC and CBS affiliates). It requires little analysis to conclude that the unique role once played by superstations in these program categories is now a matter of history.

The cable programming revolution has not come inexpensively. Operator spending for programming roughly doubled between 1986 and 1993, from \$2 billion to \$4 billion, almost all of it in license fees to cable networks. Basic subscribers increased during the same period only from 42 million to 59 million. (Cable Television Developments, National Cable Television Association, 1994.) Cable networks, however, typically have softened disproportionate increases in program costs by providing cable operators with carriage incentives ranging from local advertising "avails" to licensing discounts on packages of commonly owned networks. Since channel capacity on most cable systems still falls short of the number of networks seeking carriage, the competition among networks seeking slots on cable systems can be fierce, with some of the newer entrants actually offering to reverse the customary direction of cash flow, and pay carriage fees to the operators.

Cash incentives offered to operators for network carriage still are relatively rare, but that such schemes exist at all illustrates both the abundance of cable programing available to operators, and the atypical circumstances which now characterize the business of distributing superstations signals. Satellite carriers offering these signals obviously can adjust the transport fees they charge to operators to fit specific competitive circumstances, but they have no control over the copyright

fees established by the government for operator use of these signals. Nor are they able to offer incentives such as local ad "avails" since the Copyright Act strictly forbids alteration of the signals' content. Superstation signals, therefore, increasingly are a commodity outside the normal rules of the burgeoning marketplace for cable programming. Just as they have lost much of their unique programming value in the face of proliferating cable networks, the commercial circumstances under which they are made available to operators have become, comparatively speaking, increasingly expensive and inflexible.

Controversy Over the Compulsory License

The legal, legislative and political history which gave rise to the cable compulsory license is beyond the scope of my testimony. It is sufficient for these purposes to say that in 1976 Congress validated the practice of cable operators retransmitting broadcast signals, local and distant, but imposed an obligation on them to pay a royalty fee for the use of distant signals.

Over time, the compulsory license became something of a political albatross for the cable industry. Beginning in 1979 representatives of the program production community, professional sports and the broadcasters formally asked Congress to repeal the compulsory license. In each of the six subsequent Congresses some or all of these groups reiterated their demands for the license's repeal, frequently in hearings convened for the purpose. Many of the industry's critics repeatedly cited the

license as a prime example of cable's "special treatment," and the cause of a perceived "uneven playing field."

The FCC joined the fray in 1988 when it established "syndex" rules allowing local TV stations which had purchased exclusive rights to specific syndicated programs to require cable operators to delete those programs from distant signals imported into the local station's market. Five months later, in an associated proceeding, the Commission voted to recommend to Congress that the license itself be repealed.

The actual political likelihood of the license being repealed during this period was no more than slight. The role played by the *controversy* over the license was substantial, however. The resentment within the broadcasting community at cable's ability "to compete with broadcasters using the broadcasters' own signals," whether strictly rational or not, grew rather than diminished during the 1980's, and played an important part in mobilizing broadcasting industry support of cable re-regulation in the early 1990's. Similarly, the long running "backyard dish" controversy of the late 1980's, in which C-band dish dealers sought a Congressionally legislated mandate to obtain distribution rights for cable program networks in the C-band market, pitted cable interests against the C-band dealers' claims that all they wanted was a fair analogue to the cable compulsory license. The dish dealers' insistence on "equal treatment" bore fruit when Congress included "access to cable programming" provisions in the 1992 cable re-regulation bill.

Of greater consequence, during this same period copyright holders of programming carried on distant signal stations raised repeated complaints about the compulsory license and sought to tar the cable industry as an "unregulated monopoly." This phrase was taken up as a battle cry by editorial writers around the country, and by the industry's critics inside and outside of Congress. It was, after the wounds the industry inflicted on itself through its pricing and service policies, the single most important factor leading to Congressional enactment -- over President Bush's veto -- of cable re-regulation in 1992.

During the period discussed the cable industry's leadership was for the most part aware of the diminishing commercial value of distant (as distinguished from local) signals, and of the growing political liabilities of the compulsory license system, at least insofar as it concerned distant signals. Why, then, did the license survive?

The answer to this question is that from the cable perspective, the principal impediment to reaching a settlement that would have called for the license's repeal was sports.

The Sports Difference

Sports programming represents the one peculiarly attractive attribute of distant signals, particularly superstations, which has remained constant since Ted Turner's WTBS went on the satellite in 1976. Unlike syndicated sitcoms,

action-adventure shows, talk shows, game shows and movies, major league sporting events are sold to television in accordance with teams' franchise agreements, which almost always require a degree of geographic exclusivity within the sport. Thus while any cable network can compete for national distribution rights to any package of movies or series programs, absent the compulsory license, a distant signal such as WTBS would not as a practical matter have the ability to contract for national distribution of an individual team's sports programming.

By virtue of the compulsory license, superstations, can overcome the practical obstacles to showing national sports programming and an invariable attribute of all superstations has been inclusion of major league sports in the program lineup. Indeed, the principal motivating factor in Ted Turner's 1976 purchase of the Atlanta Braves was protection of his capacity to nationally telecast major league baseball games, an advantage he would have lost had the Braves' then owners gone ahead with a plan to move the money-losing team out of Atlanta. The following year Turner purchased the Atlanta Hawks basketball team, citing the same reasons. (Goldberg and Goldberg, *Citizen Turner*, Harcourt Brace, 1995, pp. 174-178, 194). Had Turner not taken these steps, and lost the Braves and Hawks games, it is unlikely that WTBS ever would have gone beyond being a regional signal on cable systems, or that the entire superstation phenomenon would have occurred.

The continuing importance of superstation-delivered major league sports to cable companies can be seen, again, by looking at the channel lineup of the Washington, D.C. cable system during the week of July 16, 1995. D.C. Cablevision

subscribers had a choice of 15 games over the 7 day period: 5 were Orioles games, of which 3 were available off-air. Of the remaining 10 (out of market) games, 7 were on superstations. When it comes to major league sports, then, superstations quite clearly fulfill a radically more important role on the D.C. cable system than the one they now play in other program categories. This is typical throughout the industry.

Another way in which major league sporting events differ from other kinds of programming is the way in which fan loyalty strongly discourages removal of favorite teams' games from a cable system's menu of viewing options. It is a rule of thumb in the cable industry that not all cable subscribers are sports fans, but all sports fans are cable subscribers, and the easiest way to make them unhappy is to cut off their access to teams they follow. Another generally accepted rule of thumb is that sports fans are uniquely capable of outrage.

Tales of subscriber uproar over planned "drops" of superstations are legendary in the cable industry. When the Media General cable system in Fairfax Country, Virginia, decided to drop WGN in the middle of the 1988 baseball season, angry Chicago Cubs fans deluged the country council with phone calls and petitions demanding that the signal be restored. While the council had no authority to dictate the cable system's programming choices, it could -- and did -- immediately begin to deny otherwise routine requests by Media General dealing with buildout schedules, imposing daily fines when the company's construction crews couldn't keep up. After a group of subscribers calling themselves "Citizens for the Cubs" filed a lawsuit

against the company accusing it of failing to live up to its franchise requirements concerning, among other things, the buildout schedule, Media General capitulated and restored WGN to its lineup.

Similar controversies over planned drops of superstations (most of which, interestingly, also involved the Cubs) have occurred in other parts of the country, most frequently in the immediate aftermath of royalty increases ordered by the now disbanded Copyright Royalty Tribunal.

While serving as President of NCTA, on numerous occasions I was questioned by Members of Congress upset that cable systems located in their districts or states planned to drop distant signals carrying constituents' favorite teams. On more than one occasion Members of Congress publicly complained to me that the superstation televising their favorite team's games was unavailable on the cable systems serving their home in the Washington, D.C. area. Once a United States Senator whose local home was in Montgomery County, Maryland, and who apparently believed (ironically) that coverage of Cubs games was a peculiar feature of the Fairfax County, Virginia cable system, repeatedly asked me in a hearing why the Montgomery County cable system couldn't carry the Fairfax County system's programming. In the time it took me to elicit that it was the Cubs games on WGN he was after, the exchange had become somewhat murky to most others in the hearing room, but no one missed that he felt strongly about it. (Hearing, Committee on Commerce, Science and Transportation, Subcommittee on Communications, October 25, 1989, pp. 117-119.)

The ardor sports fans feel for their favorite teams was summed up by the Chicago native who led the Fairfax County citizens' effort to restore WGN to the Media General dial. "I have followed the Cubs since I can remember," said Larry Krakover. "I grew up with the team. It means a lot to keep up with them." (The Washington Post, July 1, 1988, Metro section, p.1.)

Conclusion

Cable operators tend to be hesitant to discontinue carriage of distant signals, particularly superstations, but their hesitancy is due to the importance to their subscribers of major league games carried on these signals, not the unique role superstations once played in adding movies and syndicated shows to the basic subscriber's menu of choices.

Movies and syndicated shows now abound on cable basic networks and on the hundreds of independent TV stations that have sprung up throughout the country in the wake of the FCC's liberalization of its licensing rules.

Given the political difficulties the cable industry has experienced in Washington as the price of defending the compulsory license for distant signals, repeal has seemed attractive. On balance, however, the continued commercial importance of major league sports carried on superstations has tipped the balance. It makes little sense to undermine the attractiveness of subscribership to an important demographic group — sports fans — who form the bedrock of the cable customer base.

It is the industry's experience, moreover, that subscribers alarmed at the actual or feared loss of major league games on superstations tend to create unacceptable political controversies at the local level, which are felt in Washington, too.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

James P. Mooney

Date



TRYGVE E. MYHREN PRESIDENT

TEL. (401) 277-7122
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TESTIMONY OF TRYGVE E. MYHREN

I. QUALIFICATIONS

I have been in the cable television business since 1975. Currently, I am
President and a director of the Providence Journal Company, which owns and
manages cable systems serving approximately 800,000 subscribers.

The Providence Journal Company has contracted to sell these systems to

Continental Cable Company, Inc. When the sale closes I will become a director
of Continental Cablevision, Inc. which owns and manages cable systems which
serve over 4 million subscribers.

The Providence Journal also owns and manages eleven television broadcast stations, the Journal-Bulletin newspaper and various video programming ventures.

From 1981 until 1988, I was the Chairman and CEO of American Television and Communications Corporation which was the cable television subsidiary of Time Inc. (Now Time/Warner Cable). From 1975 through 1981 I oversaw ATC's Marketing and Programming. During my tenure at ATC, the company grew from approximately 100,000 subscribers to more than 4 million subscribers.

In 1988 I won the cable industry's premier achievement award, the Vanguard

Leadership Award. I have been a board member of the National Cable

Television Association, a member of its executive committee from 1981-1989,
and was its Chairman in 1986-1987. I cofounded the Cable Television

Administration and Marketing Society ("CTAM"), the cable industry's marketing
and programming organization. I received CTAM's Grand Tam award in 1985
and its One of a Kind award in 1994. I also was a founding board member of
the Cable Advertising Bureau.

I have served on the public boards of Turner Broadcasting Systems, Video Jukebox Network, Inc. and ATC. I also served on the internal Time Inc., board of Home Box Office.

I was chairman of the local organizing committee for the 1995 NCAA

Hockey Championships. I was a director of the Colorado Baseball

Commission and was appointed by the Governor of Colorado to assemble the ownership group for the Colorado Rockies.

I have an undergraduate degree from Dartmouth, and an MBA from the Amos
Tuck Graduate School at Dartmouth. I served three and one half years as a
naval officer with the U.S. Pacific Fleet.

II. PURPOSE AND SUMMARY OF TESTIMONY

I am presenting this testimony in the 1990-92 cable royalty distribution proceeding on behalf of the Joint Sports Claimants (Major League Baseball, National Basketball Association, National Hockey League, and National Collegiate Athletic Association). JSC asked that I offer the Copyright Arbitration Royalty Panel my opinions concerning the relative values that

the cable industry attached to non-network sports, movies and syndicated programming on distant signals between 1990 and 1992. They also asked for my views on whether Nielsen ratings are a good measure of the value of distant signal programming to cable operators.

I believe that the cable industry considered sports programming to be the most valuable programming on distant signals during the years 1990 through 1992, far more valuable than movies and syndicated programming. If it could have been arranged, I would have preferred that my cable operators purchase only the sports on distant signals, and not carry the movies and syndicated programs at all.

Further, I do not believe that the Nielsen ratings are a good measure of the value of distant signal programming to cable operators. While Nielsen ratings are among the most important sources of information for our broadcast stations, Nielsen ratings are far less meaningful to our cable systems.

III. <u>DISCUSSION</u>

a. Why Distant Signal Sports Programming is Attractive to Cable Operators

The programming lineup for a cable system must accomplish three objectives.

First, it should provide a wide variety of programming, so that there is something appealing to everyone. Second, it should provide enough of each type of programming to satisfy subscriber demand. Third, it should offer special interest programming with a real depth of appeal that will motivate particular groups to subscribe and continue subscribing to cable.

The sports programming on distant signals is particularly valued. It helps to

satisfy demand for sports offerings; between 1990 and 1992, the alternative sources of sports on cable did not provide a sufficient volume of appealing sports programming to meet the demands of sports fans.

Further, the sports programming on distant signals --- like major league baseball, NHL hockey, and NBA basketball --- particularly given its real-time, perishable nature, has a deep appeal to subscribers who value sports.

It clearly motivates potential subscribers to sign up and existing subscribers to continue subscribing.

For our New England cable systems, distant signal sports are invaluable for attracting fans of baseball teams in the national league, who sign up for cable in order to follow their teams through the national league games carried by superstations WTBS and WWOR. And many Yankee fans in New England subscribe in order to get Yankee flagship WPIX. So too, Red Sox and Bruins fans who live in areas of New England where WSBK is a distant signal demand that their local cable systems carry WSBK.

Sports programming is particularly valuable in attracting subscribers to cable because the decision to subscribe to cable tends to be made more by men than by women. Many men make their cable-subscription decision based on the sports programming that a system offers.

The movies and syndicated programming on distant signals are substantially less valuable to cable operators than the sports programming. Importantly the movies have been offered to consumers previously, typically in theaters, home video, pay television and network television. Moreover, there are

numerous other attractive sources for movies and syndicated programming.

And, many of these alternative sources are more profitable for cable operators than distant signals. If anything, cable operators would prefer that subscribers view movies on these other cable networks rather than on distant signals. It is my opinion that the supply of used movies and syndicated programming on cable exceeds viewer demand.

I understand that Bortz & Company has conducted a survey of cable operators that concludes that cable operators valued sports programming on distant signals more highly than distant signal movies or syndicated programs, and that in a free market cable operators would devote about one-third of their distant signal program budget to sports programming. Those results are consistent with my opinion on how the industry values distant signal programming.

B. The Relationship Between Nielsen Ratings and Value

I understand that in these proceedings the Motion Picture Association of America has argued that royalties should be distributed based on the Nielsen ratings earned by the different categories of distant signal programming. I am familiar with the Nielsen ratings from the broadcast television stations owned by Providence Journal Company. However, Nielsen ratings play a very minor role in the business of our cable systems, because the information they measure --- viewing of specific programs --- is not as important to cable system operators.

Ratings are important to our broadcast stations because 100% of our broadcast television station revenues come from advertising. The goal of our broadcast stations is to attract the maximum audience to individual programs, so that

we can sell that audience to advertisers at the highest possible price. For our broadcast stations, we pour over ratings data as soon as Nielsen publishes the data.

In contrast, 95% of the revenues for our cable television systems come from subscriptions, and only 5% come from advertising. Accordingly, we are less concerned with the audience size for individual programs and are far more attentive to insuring that we provide programming to suit a wide variety of interests, and that we provide sufficient amounts of desirable programming, given finite carriage capacity, to satisfy our subscriber's wants.

In our cable business, we therefore pay little attention to Nielsen ratings.

Instead, the numbers we focus on and keep at our finger tips are numbers related to subscribers --- how many subscribers we have, how many subscribers have joined in the past month, how many subscribers have departed.

In our cable business, if we are presented with the option to carry two program services, one we expect to attract at .1 rating, and the other a .3 rating, we might very well select the one with the .1 rating --- if the programming on that service is attractive to a group of potential subscribers to whom our current programming is not attractive and if we judge that the programming that promises the .3 ratings is largely duplicative of programming carried in depth on one or more of our other cable channels. We would rarely make a similar decision in our broadcast business.

Thus, even though sports programming on distant signals may attract fewer

total viewers than syndicated programs or movies (largely because sports programming is in short supply and therefore there is less of it broadcast), distant signal sports programming is more valuable than distant signal movies or syndicated programming.

In short, we do not rely on Nielsen ratings to measure the value of cable programming. Nielsen ratings seek to measure something --- bulk viewing --- which is not central to determining the value of the different types of cable programming to cable operators.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Trygve E. Myhren

Date

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

	_)
In re)
)
DISTRIBUTION OF CABLE	NO. 14-CRB-0010-CD (2010-13)
ROYALTY FUNDS)
)

Written Rebuttal Testimony of

Susan Nathan

September 15, 2017

Corrected October 5, 2017

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I. Qualifications:

I have over thirty years of experience with media research, including service as Senior Vice President, Affiliate Research, Media Currency & Research Operations at Turner Broadcasting (2009-14); Vice President, Media Currency, at Turner Broadcasting (2007-09); Senior Vice President, Director of Media Knowledge at Universal McCann (1991-2007); Senior Vice President, Director of Media Research, at Laurence, Charles, Free & Lawson; and Vice President, and Director of Media Research, Needham, Harper Worldwide. As a senior media researcher, I have been responsible for being an expert on all issues regarding measurement of audiences across all media. My primary area of expertise is television research, including the collection and use of television audience data.

I have worked with The Nielsen Company (Nielsen) throughout my career. My first job in the industry was at Nielsen, where I learned the importance of sophisticated sampling procedures, which are critical for a rating service whose business depends on accuracy and reliability. As a client of Nielsen, I was heavily involved on behalf of my employers and our respective clients in all methodology issues involving national and local television measurement. In my role as a research director at the agencies and at Turner, I was responsible for training other employees concerning Nielsen data and how to ensure the proper use of that data.

I am a long-standing member of the Media Ratings Council (MRC), having first joined the non-profit organization in 1990 as one of the original agency representatives. The MRC (formerly the Broadcast Ratings Council) is a government-sanctioned group that audits and accredits research services for the media industry. Its membership consists of top researchers across the industry including broadcast networks, local stations, advertisers, agencies, cable networks, media companies and industry associations. Nielsen's national and local audience

¹ See http://mediaratingcouncil.org/.

measurement services are among the many research services that undergo extensive audits conducted by independent auditors and evaluated by MRC committee members who subsequently vote on accreditation of such services. I was an active member of the MRC, having served on the TV, Print, Out-of-Home and Digital Committees as well as on the Board of Directors. I also served one term as Chair of the MRC Board.

A more detailed description of my qualifications is set forth in Appendix A.

II. Introduction and Summary

The Joint Sports Claimants asked that I review the testimony Dr. Jeffrey Gray submitted in this proceeding on behalf of the Program Suppliers.² Dr. Gray sought to estimate what he termed the "distant viewing levels and shares" of different categories of programming during the years 2010-13.³ It is not entirely clear, from a review of Dr. Gray's written testimony alone, what he considers "distant viewing" to mean. However, as I understand it, Dr. Gray sought to estimate distant viewing by counting the number of Nielsen National People Meter (NPM) cable households that viewed all or any portion of each quarter-hour of programming on particular out-of-market broadcast stations.⁴

I believe that Dr. Gray's estimates of "distant viewing" are unreliable and invalid for at least two reasons. First, they are based solely upon data from Nielsen's NPM service. That service, however, is designed to measure only nationwide viewing for nationally televised programs; it cannot properly be used to estimate viewing in particular markets, primarily because of sampling design and sample size limitations. Second, Dr. Gray fails to account for the fact that Nielsen assigns different weights to each of the NPM households; he improperly treats each

² See Testimony of Jeffrey S. Gray, Ph.D. (Corrected April 3, 2017) ("Gray Testimony").

³ See Gray Testimony at p. 19, Table 2.

⁴ See Gray Testimony at p. 19, Table 2. The industry typically defines viewership of a program as the number of households tuned to the average minute of said program – and most importantly is based on the projected sample as opposed to an individual NPM household.

NPM household as having the same weight. Thus, he ignores an element that is critical to the accurate and fair use of Nielsen data.

In my opinion, one cannot reasonably consider the "viewing" estimates in Table 2 of Dr. Gray's testimony to reflect distant viewing by the universe of cable subscribers.

III. Nielsen Employs Different Samples and Methodologies to Measure National Viewing and Local Viewing

Nielsen offers different services to measure the audiences that watch television programming. One such service (NPM) measures national audiences that watch programming distributed nationally by national broadcast and cable networks and via syndication. Other services measure the audiences for programming televised by individual broadcast stations.

A. National People Meter (NPM) Service

Nielsen's NPM service "provides estimates of in-home audiences of nationally televised programs" and is "based upon a national sample of U.S. television-equipped households." Nielsen implemented the NPMs in 1987 as the method of collecting audience viewing data for all national television programming. The people meter is an electronic device that utilizes a meter attached to the TV set in combination with a remote control that has a button for each member of the sample household who is instructed to push his or her respective button when watching television. The meter automatically captures when the television set is on and the channel to which it is tuned while the remote captures the household member who is viewing. Previously Nielsen estimated national viewing using a combination of set meters which measured the on/off status of the television set as well as the channel tuned and length of that tune, with "diaries" where sample households wrote down the programs they watched and when they watched them. As cable penetration expanded in the 1980s, diaries were deemed unreliable

⁵ Nielsen National Reference Supplement 2012-13 at 1-1, Bates No. PS-2010-13-C-004415-004607.

as a means of capturing viewing and thus Nielsen switched to people meters for national audience estimates. Since the latter captured viewing electronically, this change provided what Nielsen considered to be more accurate ratings estimates, especially for lower rated nationally-distributed cable networks.

During the years 2010-2013, the NPM sample consisted of approximately 22,000 households. Nielsen carefully selected the NPM sample to represent approximately 110,000,000 U.S. TV Households, approximately 60% of which subscribed to cable. In order for a sample that small to properly represent a constituency that large, special care must be given to sample selection, including (but not limited to): geographic distribution (to ensure all areas in the U.S. are represented); demographic distribution (age, gender, race, ethnicity, income, education, etc.); cable status; and presence of children. Nielsen employs sophisticated weighting schemes to lessen the chance of any bias in the NPM audience estimates. Each household is representative of a certain number of viewers. As Nielsen explains: "The weights measure the number of people in the population that are represented by each member of the sample. For example, if [a] sample member has a weight of 20,000 for a selected day, this means that on that day the sample member represents 20,000 in the population." As this also suggests, the weight attached to each NPM household might vary on a daily basis.

Nielsen selected the NPM households to be representative of nationwide viewership of programming that is distributed nationally. These households were not selected to measure viewership in particular markets or portions of those markets; generally, there are insufficient participating NPM households in a given locality to measure local viewership. While there

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⁶https://audiencewatch.nielsen.com/data/help/Tutorial/Appendices/Weighted%20vs.%20Unweighted/weighted.htm

might be a people meter or two in a specific county, one could not properly use the viewing results from those people meters alone to estimate the local viewing in that county.

B. Local Market Services

Nielsen employs different samples when measuring local rather than national viewership. Nielsen uses three different methods for measuring local markets which vary depending on market size. There are a total of 210 local markets in the U.S., known as "Designated Market Areas" (DMAs). Nielsen assigns each county in the United States to one, and only one, DMA so that the DMAs are mutually exclusive and do not overlap. It also associates each broadcast television station with a single DMA.

1. Local People Meters (Top 25 Markets)

In the top 25 DMAs, Nielsen supplements the NPM households with additional people meters, known as Local People Meters (LPM), because there simply are not enough National People Meters in any market to measure local viewing in that market. For the largest markets (1-5) in 2010-2013, Nielsen added between 800 and 1000 additional households per market, and it added 600 per market for the remaining twenty markets. For each such market, Nielsen weighted the NPM sample households differently to be representative of the local market rather than the national market.

2. Set Meters/Diaries (Markets 26-56)

In the next largest group of DMAs (26-56) Nielsen utilized a combination of set meters (to gather household viewing) and diaries (to capture demographic viewing) during 2010-2013. The set meter is attached to the television and captures set on/off and channel tuned. The meters measure household viewing 24/7 passively. However, a completely different sample of homes fill out paper diaries which are only done for one week at a time during the sweep periods of February, May, July and November (note: the larger markets have three additional months of

measurement). The diaries are merged with the household tuning data from the set meters to project audience estimates in a process called meter/diary integration. Sample sizes vary by market.

3. **Diaries (Market 57-210)**

During 2010-2013, Nielsen used diaries in all non-LPM markets (as described above) but diaries were the sole source of audience measurement in markets 57-210. A completely separate sample is utilized in each of these markets and respondents are recruited to fill out one 7 day/24-hour diary per member of the recruited home during the sweep periods.

* * * * * * * *

All of the above methods employ varying design-specific weighting schemes to ensure proper representation. The importance of these design-specific statistical adjustment procedures cannot be underestimated as these adjustments are critical to the mitigation of bias in the projections.

IV. The Distant Viewing Estimates In The Gray Testimony (Table 2) Are Unreliable And Invalid

A. Misuse of National People Meter Data

I understand that, for each of the years 2010-2013, Dr. Gray selected a stratified random sample of approximately 150 broadcast television stations of the more than 1,000 stations that cable systems retransmitted outside the their local markets, *i.e.*, on a distant signal basis.⁷ Nielsen then provided Dr. Gray with a custom report that was purported to show the number of NPM cable households tuned to all or any portion of a quarter hour of programming broadcast on the sample stations during 2010-2013 — broken down by the number of NPM households

⁷ I understand that a broadcast station is generally considered to be a "distant signal" in geographic areas outside its local DMA; however, for purposes of these proceedings, the legal standard for determining distant signal status is not in all cases identical to the DMA.

located within counties that the Program Suppliers considered local for each such station (local NPM households) and NPM households outside those counties (distant NPM households).⁸

For approximately 94 percent of the quarter hours on the Gray sample stations, Nielsen's custom report provided Dr. Gray with no data whatsoever as to viewing by distant NPM households; for the remaining quarter hours, the Nielsen custom report generally showed that no more than one or two NPM cable households viewed all or a portion of those quarter hours. Less than 0.01% of the quarter-hours showed viewing by more than five NPM cable households.⁹

These results are not surprising. As explained above, Nielsen designed the NPM service on which Dr. Gray relied, to measure national viewing of nationally-distributed programming, not to estimate the number of households that viewed a broadcast station's programming in any given market, local or distant. Thus, there were an insufficient and unrepresentative number of NPM households to measure viewing in each market; and, for all markets, the participating households were weighted in the NPM sample to be representative on a national rather than local level. Dr. Gray appears to recognize as much when he states that the "many instances of no recorded distant viewing" were "[d]ue to the low frequency of distant viewing and the size of the sample Nielsen uses to measure total U.S. household viewing" What he ignores, however, is that that the NPM sample was not intended to measure viewing in each separate market.

The one exception here involves viewing of programming on WGNA, which was included in each of Dr. Gray's 2010-2013 samples. Unlike the other sample stations, WGNA was nationally-distributed and available to over 40 million cable households around the country in 2010-2013, and the NPM service should have been able to provide valid and reliable viewing

⁸ See Gray Testimony at pp. 12-13; Testimony of Paul B. Lindstrom, at pp. 4-5 ("Lindstrom Testimony") (Dec. 22, 2016); Analysis of Written Direct Testimony of Jeffrey S. Gray, Ph.D. in the 2010-13 Cable Royalty Proceeding, at pp.11-12 (Sept. 15, 2017) (Wecker Report).

⁹ See Wecker Report at p.13.

¹⁰ See Gray Testimony at p. 17.

estimates for WGNA. However, as I understand it, Nielsen's custom report for Dr. Gray showed no data for the vast majority of quarter hours on WGNA and showed no more than one household as viewing each of the remaining quarter hours. 11 Indeed, according to the report, only one distant NPM household watched one minute of a single program (a Bulls telecast) during the year 2013. I would not have expected such results. And, in fact, they appear to be inconsistent with NPM viewing data that Nielsen has provided to other customers. 12

B. Failure To Account For Nielsen Weighting

An additional problem with Dr. Gray's study is that he estimates distant viewership using unweighted Nielsen data. As explained above, Nielsen carefully weights each NPM household to help ensure that the NPM data can properly be projected to the universe; those weights are not all the same and weightings may change on a daily basis for individual NPM households. The weight of a sample member equals the number of members of the population that the sample member represents. Nielsen sample weights are generally between 4,000 and 30,000.

In arriving at his distant viewing estimates, Dr. Gray treats each NPM sample household as equal — even though each NPM sample household is not equal in Nielsen's sample design. Rather, each household is representative of a different number of potential viewers. Simply estimating the number of sample participants that might view a given program is not an accurate means of estimating viewership. By ignoring the weighting and assuming one people meter household is the same as another, Gray also applies the unweighted data in a manner for which it was not intended. It should be noted that it would likewise be inappropriate to apply the NPM weights to data concerning distant viewing. As discussed above, Nielsen develops weights specific to the sample at issue. The NPM weights are only representative of national viewing. In

See Wecker Report at pp.13-14.See Wecker Report at p. 15.

order to estimate distant viewing, one would need to develop weights specific to the market being estimated.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on September <u>13</u>, 2017.

Susan Nathan

APPENDIX A

Susan Nathan Consultancy: January 2015-present

Susan uses her expertise in research and technical media issues to provide guidance and advice to organizations in the media industry.

Turner Broadcasting: August 2007-December 2014 Senior Vice President, Affiliate Research, Media Currency & Research Systems

Susan held a leadership role at Turner and was on the Executive Committee that oversaw the 180 Turner Researchers. She ran a successful team of research professionals and her varied responsibilities included:

Complete oversight of Turner Network Sales & Marketing research efforts which provided insight on audiences and industry trends, and oversaw the development of analyses and custom research to assist top management in setting strategy and goals for marketing Turner's networks to MVPDs;

All research activities for TBS, Inc.'s in-house media planning agency, Turner Media Group (TMG), including designing and conducting custom research on the effectiveness of off-air promotions as well as partnering with media sellers to develop key insights for the implementation of strategic media plans;

Ongoing research analysis and insights regarding advertising currencies, audience measurement initiatives and emerging industry and market trends in support of all TBS, Inc. businesses. This specifically included expertise in all issues regarding Nielsen;

Management of all research systems utilized by Turner Research including the development of custom and proprietary modules to drive increased business for TBS, Inc.;

Oversight of Turner's Media Lab facility in Atlanta utilized for focus groups and usability studies benefiting TBS, Inc. businesses.

Other Professional Experience:

1991-2007	Senior Vice President, Director of Media Knowledge Universal McCann/McCann Erickson
1986-1991	Senior Vice President, Director of Media Research Laurence, Charles, Free & Lawson
1981-1986	Vice President, Director of Media Research Needham, Harper Worldwide

1978-1981 Network Negotiator

1977-1978 Senior Media Research Analyst

William Esty Company

1974-1977 Account Group Manager

A.C. Nielsen Company

Professional Associations

4A's Media Research Committee (member 1986-2007, former Chair)

AMRC – Agency Media Research Council (member 1981-2007, former Chair)

ARF – Advertising Research Foundation (member 1980-2014, former Subcommittee Chairperson)

CIMM – Coalition for Innovative Media Measurement (2009-2014)

MRC - Media Ratings Council (member 1990-2014, former Chair of the Board)

Nielsen Customer Expert Committee (2007-2014)

Nielsen Policy Guidelines Committee (1997-2005)

Susan has been very active in the media research community include being a long standing active member of the Media Rating Council including its Board of Directors and has served as Chair of the Board. In addition to the MRC, she served as Turner's representative on CIMM (Coalition for Innovative Media Measurement), CRE's RPD Committee, comScore's Cross Media Advisory Board, the CONCAM Technical Subcommittee, the IAB Research Council and several ARF committees.

Susan was also the former Chair of the 4A's Media Research Committee and the Agency Media Research Council from her days on the agency side of the business.

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

In re)	
)	
DISTRIBUTION OF CABLE)	NO. 14-CRB-0010-CD (2010-13)
ROYALTY FUNDS)	
)	

Written Rebuttal Testimony of

JAMES M. TRAUTMAN

September 15, 2017

Corrected October 5, 2017

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Written Rebuttal Testimony of JAMES M. TRAUTMAN

I. Qualifications

I am Managing Director of Bortz Media & Sports Group, Inc. (Bortz). I have submitted written direct testimony in this proceeding on behalf of the Joint Sports Claimants (JSC), sponsoring the report entitled "Cable Operator Valuation of Distant Signal Non-Network Programming: 2010-13" (dated December 22, 2016) (Bortz Report). The Bortz Report discusses the methodology, results and history of the 2010-13 cable operator surveys that Bortz conducted for JSC (Bortz surveys) as well as the significance of the superstation WGN America (WGNA) in the 2010-13 distant signal marketplace. Appendix A to my written direct testimony sets forth my qualifications as an expert in market research – including survey research and valuation in the cable, broadcast and television programming industries.

II. Introduction and Summary

The purpose of my rebuttal testimony is to address the written direct testimony of other witnesses in this proceeding who have commented on the prior and current Bortz surveys and offered similar cable operator surveys: (1) Howard Horowitz and Dr. Martin Frankel on behalf of the Program Suppliers; (2) Dr. Erkan Erdem on behalf of the Devotional Claimants; and (3) Linda McLaughlin and Dr. David Blackburn on behalf of the Public Television Claimants (PTV).

1. The testimony of Howard Horowitz discusses the methodology and results of cable operator surveys conducted by Horowitz Research (Horowitz) for each of the years 2010-13. Mr. Horowitz states that these surveys were "designed to carefully replicate the methods and procedures of the Bortz Survey that was done for the 2005 royalty year." *See* Corrected April

25, 2017 Direct Testimony of Howard Horowitz (Corrected Horowitz testimony) at 3. However, the Horowitz surveys depart from the Bortz survey methodology in certain respects and contain significant flaws that lead to biased results, primarily in favor of the Program Suppliers.

Suppliers (and Devotional) programming on WGNA, the most widely carried distant signal in 2010-13; thus, respondents whose cable systems retransmitted WGNA valued Program Suppliers (and Devotional) programming that was not entitled to any share of Section 111 royalties. Horowitz also improperly asked respondents to value a separate (and third) type of Program Suppliers' programming (which it termed "Other Sports") – even where their cable systems carried virtually no such programming on a distant signal basis during the years 2010-13. Indeed, approximately one-half of the respondents who Horowitz asked to value "Other Sports" carried WGNA as their only commercial distant signal, and WGNA televised less than two hours of "Other Sports" per year during 2010-13. Moreover, Horowitz gave respondents misleading examples and descriptions of Program Suppliers programming on WGNA (and other stations), suggesting that the respondents value within the Program Suppliers category programs that their systems did not carry at all or did not retransmit on a compensable basis, or that do not belong in the Program Suppliers category.

2. Dr. Erdem says that the JSC and Commercial Television (CTV) categories also are affected by the WGNA non-compensable programming issue. However, consistent with the Copyright Royalty Judges' (Judges') conclusion in the 2004-05 cable royalty distribution proceeding, the respondents' consideration of non-compensable programming on WGNA means that both the 2010-13 Bortz and Horowitz survey results should be regarded as a ceiling for Program Suppliers and the Devotional Claimants and a floor for JSC and CTV. That is because

the JSC and CTV content on WGNA was 100% compensable while the Program Suppliers and Devotional content on WGNA was mostly non-compensable. Dr. Erdem's contrary conclusion is predicated upon a fundamental misunderstanding of the WGNA programming data he reviewed.

Dr. Erdem also misconstrues certain problematic language in the Horowitz questionnaires as methodological improvements. Moreover, he correctly acknowledges the misuse of program examples in the Horowitz surveys. But he understates and mischaracterizes the implications of Horowitz's improper examples – particularly with respect to the benefits that it conferred upon both Program Suppliers and the Devotional Claimants.

3. Ms. McLaughlin and Dr. Blackburn have adjusted the 2010-13 Bortz survey results to account for the fact that Bortz did not survey cable systems that carried Canadian signals or non-commercial signals as their only distant signals. These adjustments, however, provide a "ceiling" on the PTV and Canadian shares in the 2010-13 Bortz surveys. Indeed, most of the Horowitz respondents whose systems carried non-commercial signals as their only distant signal (PTV-only Systems) allocated less than 100% to the PTV category; the Horowitz survey results thus support a lower adjustment to the Bortz results than the maximum calculated using the McLaughlin/Blackburn methodology which assumes a 100% allocation to the PTV category by PTV-only Systems. The McLaughlin/Blackburn calculation of the 2010-13 PTV award also is inconsistent with the manner in which the Judges calculated the PTV award in the 2004-05 proceeding.

McLaughlin/Blackburn have relied in part on the results of the Horowitz surveys to advocate for a higher PTV award than is reflected in the McLaughlin/Blackburn adjustment of the Bortz results. In doing so, they overlook several fundamental flaws in the Horowitz surveys

that underlie the PTV results. These flaws include over-weighting of PTV-only Systems and dependence on outlier responses from a single respondent, in each year, who completed 15 to 23% of the Horowitz survey questionnaires. It also appears that Horowitz interviewers may have instructed respondents to value hundreds of signals for which they paid no Section 111 royalties. McLaughlin/Blackburn's further reliance upon changes in "distant subscriber instances" to support an increased PTV award is misplaced because those changes do not reflect changes in relative market value.

4. I have adjusted the results of the Horowitz surveys to account, at least in part, for the design flaws discussed herein. As adjusted, the average valuations for each of the Agreed Categories of Claimants (Agreed Categories) (*see* Bortz Report at Appendix E) in the 2010-13 Horowitz surveys are comparable to, and corroborative of, those in the 2010-13 Bortz surveys, i.e., within three percentage points or less for each category. To the extent that material differences remain between the 2010-13 Bortz and Horowitz results, I believe that those differences are attributable to the uncorrected flaws in the Horowitz surveys. Even as adjusted, the Horowitz results (like the Bortz results) overstate the value of the Program Suppliers and Devotional categories at the expense of JSC and CTV given the significant amount of noncompensable Program Suppliers and Devotional programming on WGNA.

III. Testimony of Howard Horowitz and Dr. Martin Frankel

A. The Horowitz and Bortz Surveys Employ Comparable Methodologies and Each Shows that Cable Operators Valued Live Team Sports More Highly Than Any Other Distant Signal Program Type

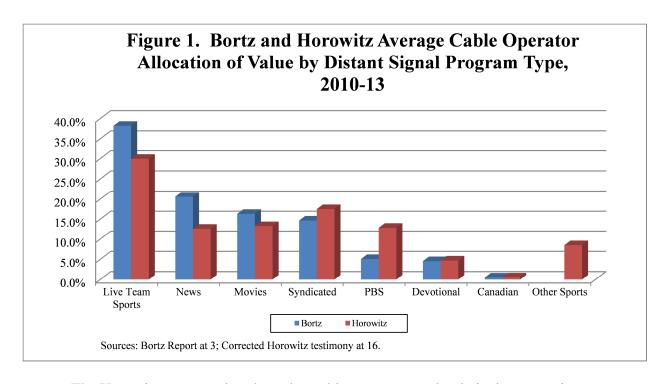
The 2010-13 Horowitz and Bortz surveys are similar in several respects. They both use a stratified sampling approach as the basis for selecting a random sample of cable systems to be surveyed, with the stratification tied to the amount of Section 111 royalties that the systems paid.

In both instances, survey response rates are well above industry norms; and responses are weighted so that each survey's key findings are projectable to all Form 3 systems, which account for over 98 percent of 2010-13 royalties. Both surveys expressly identify the distant signals that the cable systems carried, as reported on the statements of account they filed with the Copyright Office, and focus the respondents' attention on those distant signals. Both use preliminary questions designed to ascertain respondent perceptions about the importance of the different types of programming on those signals. And both employ a constant sum question to obtain a relative value allocation for each of the different program categories on the distant signals.¹

The two surveys also show that live telecasts of professional and college team sports ("Live Team Sports") received the largest relative value allocation of any single program type measured in all four years. As illustrated in Figure 1, the average value allocated to Live Team Sports in both surveys was more than 70 percent greater than the average value allocated to any other program type.

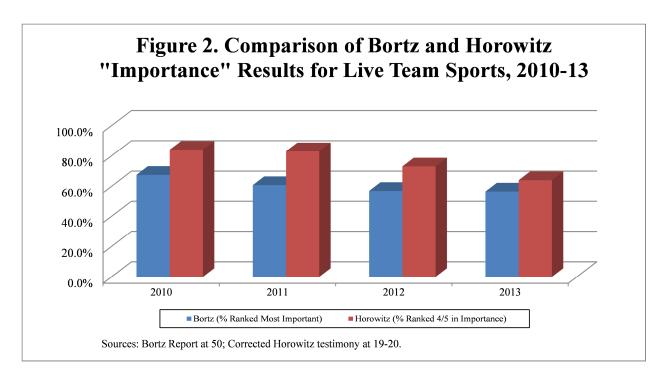
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¹ The Canadian Claimants also have submitted cable operator surveys for the years 2010-13 that employ a constant sum question to ascertain relative value (as they have in the past). (*See* Dr. Gary T. Ford and Dr. Debra J. Ringold, "The Value of Canadian Programming to Cable Systems in the United States in 2010, 2011, 2012 and 2013" (Dec. 8, 2016).) However, their surveys address only the small subset of systems that carried distant Canadian signals during 2010-13 – a "universe" of only 27 to 41 systems in these four years which provided Canadian distant signals to only about 4.5% of all cable subscribers that received distant signals. *See* Appendix Table A-1. These surveys do not provide a basis for determining the shares of other Allocation Phase Parties.



The Horowitz surveys also show that cable systems attach relatively greater importance to Live Team Sports programming. Specifically, between 64 percent and 84 percent of respondents ranked Live Team Sports as four or five (on a five point scale with five being "very important") in terms of importance to subscribers, a far higher proportion than for any other program type. *See* Corrected Horowitz testimony at 19-20. The Horowitz importance rankings are similar to the results for the Bortz survey question which asked respondents to rank the importance to their system of offering each of the program types. On this question, between 57 and 68 percent of the Bortz respondents ranked Live Team Sports as the most important type of distant signal programming for their system to offer. *See* Bortz Report at 50. Figure 2 compares the rankings of Live Team Sports by the Bortz and Horowitz respondents.²

² Each survey also had other "preliminary" questions addressing distant signal program types. Horowitz asked two questions about the use of distant signal programming advertising and promotion, similar to the 2004-05 Bortz surveys. Bortz eliminated its advertising and Footnote continued on next page



B. The Principal Difference Between the Bortz and Horowitz Survey Results Is that Horowitz Accords the Program Suppliers and PTV Higher Valuation Shares than Bortz, at the Expense of JSC and CTV

While there are similarities in the methodologies and results of the two surveys, the Horowitz surveys show a higher value share for the Program Suppliers and PTV categories than do the Bortz surveys; the higher Program Suppliers and PTV valuations come at the expense of JSC and CTV. Horowitz asked respondents to value three program types that Horowitz attributed to the Program Suppliers Agreed Category (Syndicated Series, Movies and "Other Sports") while Bortz sought valuations for two program types attributed to Program Suppliers (Syndicated Series and Movies). Both surveys assigned only one program type each to the JSC, CTV, PTV, Devotional and Canadian Agreed Categories. As shown in Table 1 and Figure 3 below, the 2010-13 Horowitz respondents allocated the Program Suppliers category a total of

promotional question for 2010-13 in favor of an expense question, based on the Judges' comments in the 2004-05 proceeding. *See* Bortz Report at 39-40.

Footnote continued from previous page

approximately eight percentage points more than Bortz respondents allocated that category.

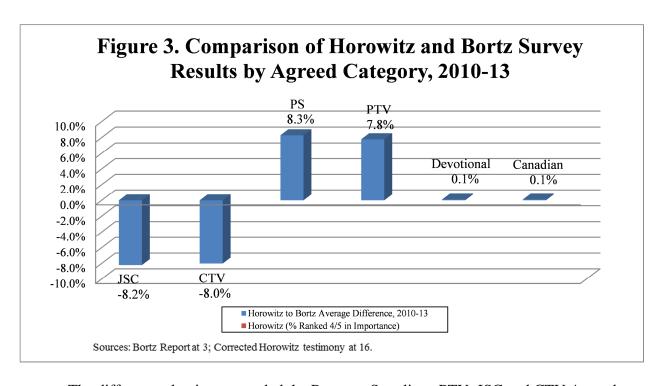
PTV also received eight percentage points more in the 2010-13 Horowitz surveys while JSC and CTV each received eight percentage points less. Year-by-year comparisons are presented in Appendix Table A-2.

Table 1. Horowitz and Bortz Weighted Survey Response Comparison, 2010-13

	Average: 2010-13			
Program Type	Horowitz	Bortz		
Live Team Sports	30.0%	38.2%		
News	12.6%	20.6%		
Syndicated	17.5%	14.7%		
Movies	13.3%	16.3%		
Devotional	4.7%	4.6%		
PTV	12.9%	5.1%		
Canadian	0.6%	0.5%		
Other Sports	8.5%	<u>NA</u>		
TOTAL	100.0%	100.0%		

Columns may not add to total due to rounding.

Sources: Bortz Report at 3; Corrected Horowitz testimony at 16.



The different valuations accorded the Program Suppliers, PTV, JSC and CTV Agreed Categories are driven in significant measure by the different valuations of respondents whose systems retransmitted WGNA as their only commercial distant signal. There were two classes of such systems: (1) those that carried WGNA as their only distant signal (WGN-only Systems); and (2) those that carried WGNA as a distant signal only with one or more distant PTV signals (WGN/PTV-only Systems)³. The 307 respondents for these systems accounted for nearly one-half of the valuation accorded the commercial television categories, including Program Suppliers and JSC.

³ This category also would include any systems that carried only WGN and Canadian signals, as well as those carrying only WGN, PTV and Canadian signals. However, Horowitz surveyed only one WGN/Canadian-only respondent (in 2010) and no respondents that were identified by Horowitz interviewers as WGN/PTV/Canadian-only. Thus, I have focused the discussion on WGN/PTV-only Systems.

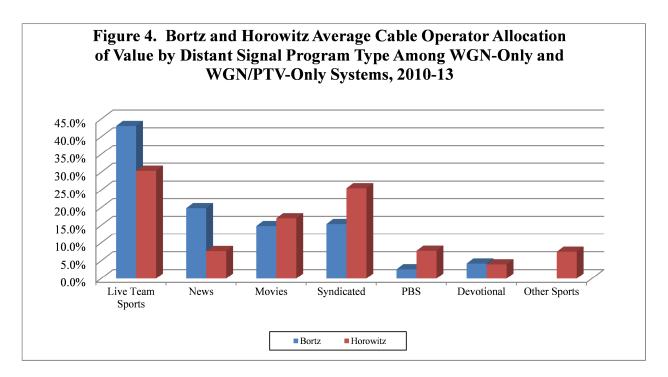
As reflected in Table 2 and Figure 4 below, the 2010-13 Horowitz respondents for WGN-only Systems accorded the Program Suppliers category a total of 54.7%, or 24.5 percentage points more than the 30.2% that the 2010-13 Bortz respondents from WGN-only Systems accorded Program Suppliers. The comparable numbers for JSC are 33.0% in the Horowitz surveys and 46.2% in the Bortz surveys, i.e., the Horowitz respondents accorded JSC (Live Team Sports) 13.2 percentage points less than did the Bortz respondents. A similar pattern can be found on WGN/PTV-only Systems. As reflected in Table 2 below, the Horowitz respondents for WGN/PTV-only Systems accorded Program Suppliers a total of 39.4%, or 9.5 percentage points more than the 29.9% that the Bortz respondents from WGN/PTV-only Systems accorded Program Suppliers. The comparable numbers for JSC are 24.3% in the Horowitz surveys and 34.4% in the Bortz surveys, or 10.1 percentage points less for JSC in Horowitz than in Bortz.⁴

_

⁴ In addition to the JSC and Program Suppliers differences between the two surveys, the disparity for the CTV category also is notable since CTV programming on WGNA (like that of JSC) is 100% compensable. CTV values in the 2010-13 Bortz surveys were nearly 12 percentage points higher among WGN-only respondents, and more than 13 percentage points higher among WGN/PTV-only respondents.

Table 2. Unweighted Survey Response Comparison for WGN-Only and WGN/PTV-Only Systems, 2010-13

	WGN-Only	O	WGN/PTV-Only			
	2010)-13	Average: 2010-13			
Program Type	Horowitz	Bortz	Horowitz	Bortz		
Live Team Sports	33.0%	46.2%	24.3%	34.4%		
News	7.9%	19.7%	7.2%	20.4%		
Syndicated	28.3%	15.7%	19.4%	14.3%		
Movies	18.2%	14.5%	14.0%	15.6%		
Devotional	4.4%	3.9%	3.1%	5.2%		
PTV	NA	NA	26.1%	10.0%		
Other Sports	8.2%	NA	6.0%	NA		
TOTAL	100.0%	100.0%	100.0%	100.0%		



As discussed further below, it is likely that the allocation differences between the Bortz and Horowitz surveys among WGN-only Systems were partially attributable to the fact that the Horowitz surveys did not adequately address WGNA programming compensability for these

systems. As shown below on Table 3, Bortz WGN-only System respondents in 2010-13 (who were asked about only the compensable WGNA programming that Bortz specifically identified) provided increased allocations to Live Team Sports and News, and lower allocations to Program Suppliers and Devotional programming, as compared with Bortz WGN-only System respondents in 2004-05 (who were not provided with any information about which programming was compensable).

Table 3. Unweighted Survey Response Comparison for Bortz WGN-only Systems, 2004-05 and 2010-13

			Change:
	2004-05	2010-13	2004-05 to
Program Type	Average*	Average**	2010-13
Live Team Sports	39.6%	46.2%	6.6%
News	12.8%	19.6%	6.8%
Syndicated	18.9%	15.7%	-3.2%
Movies	20.7%	14.5%	-6.2%
Devotional	8.0%	3.9%	-4.1%
Total	100.0%	100.0%	

^{*}No information provided about WGNA programming compensability.

C. The Higher Valuations Accorded Program Suppliers and PTV by the Horowitz Surveys Are Attributable to Design Flaws in the Horowitz Surveys

The increased Program Suppliers' share in the 2010-13 Horowitz surveys is attributable to three principal differences in the design of the 2010-13 Horowitz and Bortz surveys:

1. The 2010-13 Horowitz surveys did not identify the specific programming on WGNA that was non-compensable in these proceedings; they simply instructed the respondents not to assign value to unidentified non-compensable programming. The 2010-13 Bortz surveys provided respondents whose systems carried WGNA as their only distant signal with a description of compensable

^{**}Respondents asked only about WGNA compensable programming. Columns may not add to total due to rounding.

- programming on WGNA, and asked them to assess the relative value of only that programming.
- 2. Horowitz asked cable system respondents to value a third type of Program Suppliers programming (and an eighth overall program type) that it called "Other Sports." However, nearly one-half of the respondents' systems (those that retransmitted WGNA as their only commercial distant signal) carried less than two hours each year of "Other Sports" during 2010-13.
- 3. Horowitz added both "such as" programming type descriptions and specific programming examples. In doing so, Horowitz gave descriptions and examples of Program Suppliers programming that the cable system respondents did not carry, was not compensable or was improperly included in the Program Suppliers category.

In short, the Horowitz modifications of the Bortz methodology are problematic (not "improvements" as Program Suppliers contend) and lead to valuation results that are biased primarily in favor of the Program Suppliers.⁵

1. Failure to Account for Compensable Programming on WGNA

As noted above, WGNA was the most widely carried distant signal during the years 2010-13. Form 3 cable systems made WGNA available to over 40 million cable subscribers or nearly 80 percent of all such subscribers who received distant signals. *See* Bortz Report at 25. According to Cable Data Corporation, WGNA also generated approximately 75 percent of the Section 111 fees paid by those systems that retransmitted distant signals during 2010-13, up from 63 percent in 2004-05. *See* Bortz Report at 26-27. Approximately 80 percent of Horowitz respondents and 86 percent of Bortz respondents carried WGNA during 2010-13 on a distant signal basis.⁶

⁵ Additional methodological problems contributed to PTV's higher share in the Horowitz surveys than in the Bortz surveys. These problems are discussed below in connection with the McLaughlin and Blackburn testimony.

⁶ During 2010-13, the cable systems that retransmitted WGNA as a distant signal accounted for approximately 87.6% of the royalties paid by all cable systems that retransmitted distant signals.

The majority of the programming on WGNA during 2010-13 is not compensable in these proceedings because it did not air simultaneously on WGNA (the national "superstation" feed) and WGN Chicago (the local broadcast station available off-air). *See* Bortz Report at 28. All of the non-compensable programming on WGNA belongs in the Program Suppliers and Devotional categories. Thus, as the Judges observed in the 2004-05 cable royalty distribution proceeding, the 2004-05 Bortz respondents who carried WGNA likely overvalued the programming in the Program Suppliers and Devotional categories, primarily at the expense of the Sports and CTV categories. *See* Bortz Report at 5; 2004-05 Distribution Order at 16-17.

The significance of this issue in the context of Program Suppliers is shown below on Table 4 (and later on Table 8 addressing the Devotional Claimants), which illustrates that more than 95% of Program Suppliers programming on WGNA in 2010-13 was not compensable.

Table 4. Compensability of Program Suppliers Programming on WGNA, 2010-13

	Total:					Total:
	2004-05*	2010	2011	2012	2013	2010-13
WGNA Compensable Program Suppliers Programming Hours	355.9	554.8	276.0	126.8	241.6	1,199.2
WGNA Total Program Suppliers Programming Hours	1,640.0	7,164.8	7,254.5	7,305.6	7,285.1	29,009.9
Compensable % of Total Program Suppliers Hours	21.7%	7.7%	3.8%	1.7%	3.3%	4.1%

^{*}Reflects programming sample reviewed by CTV witness Richard V. Ducey.

Source: CTV 2004-05 Direct Case, Statement of Richard V. Ducey; and Bortz Media analysis of Gracenote/TMS programming data for WGNA and WGN Chicago.

The 2010-13 Bortz surveys addressed the WGNA program compensability issue in part, by providing respondents at WGN-only Systems with a written description of the compensable programs that WGNA actually televised in each year. *See* Bortz Report at 30 and Appendix C. In contrast, the Horowitz surveys merely instructed respondents not to assign any value to programs "substituted for WGN's blacked out programming." It is unlikely that even a knowledgeable cable industry executive would know which programs on WGNA had been substituted for other programs on a local TV station (WGN Chicago) – a station with which very

few of these executives would have any reason to be familiar.⁷ This instruction served either to accomplish nothing or, if anything, to confuse respondents by making them uncertain as to which WGNA programming they should and should not value.

In short, the 2010-13 Horowitz surveys, like the 2004-05 Bortz surveys, overstate the relative value of Program Suppliers (and Devotional) programming because they did not properly address the WGNA non-compensability issue. The 2010-13 Bortz surveys also overstate the value of Program Suppliers and Devotional programming because they address the compensability issue only for respondents whose systems carried WGNA as their sole distant signal. However, given their specific identification of compensable WGNA programming for those respondents, the 2010-13 Bortz surveys provide a better relative value estimate than do the 2010-13 Horowitz surveys (and the 2004-05 Bortz surveys) for the programming on systems that carried only WGNA.

2. Improper Addition of the "Other Sports" Category

The 2010-13 Bortz surveys (like prior Bortz surveys) asked each respondent to value up to seven types of programming on the distant signals that their systems carried; those program types were intended to correspond with the Agreed Categories in this proceeding and to be mutually exclusive. *See* Bortz Report at 16, 18, A7-A8 & Appendix E. The 2010-13 Horowitz surveys asked respondents to value the same program types. But they also added an eighth one, i.e., "Other Sports," which Horowitz included in the Program Suppliers total valuation. In the Program Suppliers total valuation.

⁷ Although important to whether programming is compensable for a *copyright owner*, the presence and identity of substituted programming on WGNA had no bearing on the amount of royalties a *cable system* had to pay to carry WGNA; thus, cable system operators had no reason to be interested in that issue. *See* Written Rebuttal Testimony of Allan Singer at 8.

⁸ Horowitz says that "Other Sports" means sports other than the live professional and college team sports that fall within the JSC Agreed Category. *See* Corrected Horowitz testimony at 5.

believe it was inappropriate to ask respondents to value a separate "Other Sports" category because most cable systems carried virtually no "Other Sports" on a compensable basis.

As Horowitz and other Program Suppliers witnesses suggest, there is a substantial amount of "Other Sports" programming (such as tennis and golf). But that programming is mainly non-compensable because it is aired by the national broadcast and cable networks and regional sports networks. The presence of "Other Sports" programming in the non-network distant signal marketplace at issue in this proceeding is, at best, modest and does not merit consideration as a third program category for Program Suppliers. With the exception of Fox-distributed programming, "Other Sports" programs are generally syndicated programs (properly included in the Bortz Syndicated program type) or programs within the CTV category and cannot reasonably be confused with the major professional and collegiate team sports that form the core of the JSC category.

Neither Horowitz nor any of the other Program Suppliers witnesses provide a justification for seeking a separate valuation of "Other Sports" programming as opposed to the several other types of programming within the Program Suppliers (or CTV) category. *See* Direct Testimony of Jane V. Saunders (Saunders Testimony) at 5-6 (identifying the various types of programming within the Program Suppliers Agreed Category). Indeed, according to the data underlying the testimony of Program Suppliers witness Dr. Gray, only 1.3% of the "volume" of programming in the Program Suppliers category consists of "sporting events" (there is no "Other Sports"

⁹ Based on signal carriage data provided by CDC, less than 21% of the systems responding to the 2010-13 Horowitz surveys carried Fox stations on a distant signal basis.

category in the Gray data). In contrast, approximately 20% of the volume of programming in the Program Suppliers category consists of "paid programming" (infomercials). ¹⁰

Furthermore, nearly half of the 691 "respondents" who Horowitz asked to value "Other Sports" (308 respondents) carried WGNA as their only commercial distant signal; and WGNA televised less than two hours per year of compensable "Other Sports" programming during the period 2010-13. In 2010 WGNA aired two compensable hours of taped pro-wrestling reruns (WWE Superstars). In 2011-13 WGNA aired a single thirty-minute (2011) or one-hour (2012-13) horse race (The Arlington Million). Such a minuscule amount of programming did not warrant a separate category in the Horowitz surveys. Asking respondents to value such a category misleadingly implied that there was a material amount of "Other Sports" programming that their systems imported when in fact there was no such programming other than these two or fewer hours each year on WGNA.

Horowitz compounded the problem by telling respondents for WGN-only Systems that "examples" of the programming "included" in "Other Sports" were "wrestling" (2010) and "horse racing" (2011-13). There were no compensable "Other Sports" on WGNA during 2010-13 other than the two hours of *WWE Superstars* in 2010, thirty minutes of *Arlington Million* in 2011 and one hour of *Arlington Million* in 2012 and 2013. The 2010 reference to wrestling as an "example" was particularly problematic because WGNA did televise 138 episodes of *WWE Superstars* in 2010 on a non-compensable basis. Moreover, Horowitz told respondents for

¹⁰ See William E. Wecker Associates, Inc. Analysis of Written Direct Statement of Jeffrey S. Gray, Ph.D, at 9 n.26.

¹¹ "Respondents" as used herein (unless otherwise specified) refers to the number of systems for which a response was provided. Because individuals responded on behalf of multiple systems and in multiple years, the number of unique individuals responding to the Horowitz surveys was much smaller. *See* Appendix Table A-3.

WGN/PTV-only Systems that "examples" of "Other Sports" "include NASCAR auto races, professional wrestling, and figure skating broadcasts." But these systems carried no NASCAR auto races or figure skating broadcasts during 2010-13; nor did they carry any compensable wrestling other than the two hours of *WWE Superstars* in 2010.

While several Horowitz respondents did not accord any value to the "Other Sports" category, there were 197 respondents from the 308 WGN-only and WGN/PTV-only Systems in 2010-13 that did do so. Their average valuation for "Other Sports" was 12.1%; some Horowitz respondents accorded "Other Sports" on WGNA a valuation as high as 30%, without being informed of the "Other Sports" that WGNA actually televised. In my opinion, all of the "Other Sports" valuations from WGN-only and WGN/PTV-only respondents should be discarded. There is no proper basis for seeking valuation of a separate "category" of programming when that "category" accounted for only two hours or less per year of the compensable distant signal programming retransmitted by these respondents' cable systems.

3. Misleading Examples and Descriptions of Program Suppliers Programming

Unlike the 2010-13 and all prior Bortz surveys, the 2010-13 Horowitz surveys provided examples and/or "such as" descriptions of programming included in some (but not all) of the program types for which they sought respondent valuations. These examples and descriptions varied by year and the type of system.¹² The use of program examples and descriptions injected

1. WGN-only (based on data provided by CDC, there were 215 responding systems that carried WGNA as their only distant signal);

¹² Horowitz separated cable systems into one of five groups:

^{2.} Network (responding systems that carried stations affiliated with the ABC, CBS or NBC networks as their only distant signals or in combination with other types of distant signals); and Non-Network systems (responding systems that carried Footnote continued on next page

fundamental flaws into the Horowitz surveys, especially since the examples and descriptions were read to respondents a total of four times.¹³

a. WGN-only Systems

As noted above, nearly 30 percent of the systems responding to the 2010-13 Horowitz surveys carried WGNA as their only distant signal. The program examples and descriptions that Horowitz provided to the WGN-only respondents for the "Other Sports," Syndicated Series and Movies categories (the three categories Horowitz attributed to Program Suppliers) were

Footnote continued from previous page

non-network stations (i.e., those not affiliated with ABC, CBS or NBC) as their only commercial distant signals). The Non-Network group included systems that carried WGNA as their only commercial distant signal; based on data provided by CDC, there were 92 responding systems that carried only WGNA and one or more distant PTV signals, as well as one responding system that carried only WGNA and a distant Canadian signal. Excluding the WGNA/PTV or Canadian-only respondents, CDC data indicate these two groups included 383 responding systems;

- 3. PTV-only (40 systems that carried non-commercial educational stations (PTV) as their only distant signals); and
- 4. Canadian-only (one system that carried Canadian stations as its only distant signals (in one year, 2011)). Based on CDC data, there was also one respondent that carried and was asked to respond about only PTV and Canadian distant signals.

Program Suppliers have argued during each of the cable royalty distribution proceedings conducted during the past three decades that the Bortz surveys should include examples for each program type. In the 2004-05 proceeding, the Program Suppliers submitted a cable subscriber constant sum survey that used program examples. JSC and other parties criticized the surveys for that (and other) reasons. See Settling Parties' Proposed Findings of Fact, In Re Distribution of the 2004 and 2005 Cable Royalty Funds, ¶¶ 502-515; Rebuttal Testimony of Dr. Gregory M. Duncan, In Re Distribution of the 2004 and 2005 Cable Royalty Funds, December 11, 2009, at 7-8; Rebuttal Testimony of Jeffery S. Berman, In Re Distribution of the 2004 and 2005 Cable Royalty Funds, December 11, 2009, at 5-8. It has been, and remains, the view of Bortz Media that program examples should not be used in the Bortz or comparable surveys. See Bortz Report at A-7 to A-8. The use of such examples needlessly complicates the survey questions and, if not done properly, can mislead respondents; it also is unnecessary given that the respondents are knowledgeable cable industry programming professionals. If program examples are used, it is essential to ensure that such examples accurately reflect the compensable distant signal programming actually carried by each respondent. As discussed below, the 2010-13 Horowitz surveys failed to do so.

misleading in several respects. *See* Appendix B, which provides a list of the programs that Program Suppliers witness Dr. Jeffrey Gray identified as compensable during 2010-13.

i. "Other Sports." The Horowitz interviewers always asked the respondents to value "Live Team Sports" first, followed by the "Other Sports" category.
 They provided different program examples in 2010, on the one hand, and 2011-13 on the other hand, for WGN-only Systems:

2010: "Other sports programming broadcast on WGN. Examples include *WWE Superstars*." (See Bates Nos. 003908-003915)

2011-13: "Other sports programming broadcast on WGN. Examples include Horse Racing." (*See* Bates Nos. 003925-003931; 003982-003989; and 004002-004009)

As discussed above, it was improper for Horowitz to include an "Other Sports" category for WGN-only Systems because those systems retransmitted less than two hours per year of compensable "Other Sports" programming. Even if an "Other Sports" category were appropriate for WGN-only Systems, referring to Horse Racing as an "example" of "Other Sports" in 2011-13 was misleading. Doing so suggested that there were multiple telecasts of various "Other Sports" on WGNA in these years, when in fact the <u>only</u> compensable "Other Sports" telecast on WGNA in each of those years was a single horse race per year: the *Arlington Million*. And referencing "Horse Racing" suggested that this was a regular offering on WGNA, when in fact WGNA televised only one race per year. Moreover, the *Arlington Million* is not compensable in the Program Suppliers category; it was produced for, and aired only on, WGNA, thereby placing it in the CTV category. *See* Notice of Participant Groups, Commencement of Voluntary Negotiation Period (Allocation), and Scheduling Order, No. 14-CRB-0010-CD (2010-13) (Nov. 25, 2015) at Appendix A (setting forth Agreed Categories of Claimants).

Referring to WWE Superstars as an "example" also was misleading because WGNA televised no compensable "Other Sports" in 2010 aside from two one-hour airings of WWE Superstars. In addition, WGNA televised WWE Superstars 138 times in 2010 on a non-compensable basis, i.e., the program aired on WGNA but not on WGN Chicago. It is unlikely that any of the WGN-only respondents knew that only two of the 140 telecasts of WWE Superstars were compensable; therefore, these respondents almost certainly gave their valuation of "Other Sports" for all 140 telecasts (in addition to any other implied value that they attributed to the category because of the misleading use of the term "example") rather than only two telecasts. Moreover, like the Arlington Million and unlike other WWE programming, WWE Superstars was produced for, and aired domestically, only on WGNA.

ii. Syndicated Series. As shown on Table 2 above, Horowitz WGN-only respondents allocated an average of 28.2% to Syndicated Series – nearly double the 15.7% average allocation among Bortz WGN-only respondents. In my opinion, they did so because of the misleading program examples supplied by the Horowitz surveys. The Horowitz description of Syndicated Series for WGN-only Systems was as follows:

2010: "Syndicated series such as sitcoms, dramas, children's shows, talk shows, reality shows, game shows, and other series broadcast on WGN. Examples include programs such as *Curb Your Enthusiasm*, *Legend of the Seeker*, and *Smash Cuts*." (*See* Bates Nos. 003908-003915)

2011: "Syndicated series such as sitcoms, dramas, children's shows, talk shows, reality shows, game shows, and other series broadcast on WGN. Examples include programs such as *Cheers*, *30 Rock*, and *Just Shoot Me*." (*See* Bates Nos. 003925-003931)

2012: "Syndicated series such as sitcoms, dramas, children's shows, talk shows, reality shows, game shows, and other series broadcast on WGN. Examples include programs such as 30 Rock, Adelante Chicago, People to People, and MDA Show of Strength." (See Bates Nos. 003982-003989)

2013: "Syndicated series such as sitcoms, dramas, children's shows, talk shows, reality shows, game shows, and other series broadcast on WGN. Examples include programs such as 30 Rock, Adelante Chicago, Everybody Loves Raymond, and People to People." (See Bates Nos. 004002-004009)

Thus, Horowitz provided a list of six types of programming included in Syndicated Series, and supplemented that list with three to four examples of specific programs. Referring to six types of syndicated programming in the "such as" portion of the question was misleading since four of the six types listed did not appear as compensable syndicated program types on WGNA in any of the four survey years, i.e., WGNA televised no compensable Game Shows, Reality Shows, Talk Shows or syndicated Children's Shows in any of the four years. Moreover, paid programming (i.e., infomercials), which accounted for both the largest number of compensable syndicated programs and syndicated programming hours on WGNA from 2010-13, was not mentioned as a syndicated program type. Furthermore, as summarized below in Table 5 and in the discussion that follows, there were several problems with the selected examples:

Table 5. Horowitz WGN Only Examples, Syndicated Series

	Applicable	Total	Compensable	Percent	
Program Title	Years	WGNA	WGNA	Compensable	Comments
Everybody Loves Raymond	2013	None	None	NA	Not a WGNA program
Adelante Chicago	2012-13	NA	NA	NA	Not a syndicated program
People to People	2012-13	NA	NA	NA	Not a syndicated program
30 Rock	2011-13	1,884	459	24%	Mostly non-compensable
Cheers	2011	500	1	0%	Almost entirely non-compensable
Just Shoot Me	2011	3	3	100%	Aired on only one day that year
Curb Your Enthusiasm	2010	193	0	0%	Non-compensable
Smash Cuts	2010	74	0	0%	Non-compensable
Legend of the Seeker	2010	85	85	100%	Not an "example;" only compensable program in category

[✓] In 2013, the comedy series *Everybody Loves Raymond* was used as an example. This program did not air on WGNA; it was shown only on WGN Chicago. Program Suppliers' own expert, Dr. Gray, did not identify any WGNA telecasts of *Everybody Loves Raymond* in his viewing study. *See* Appendix B.

- ✓ In both 2013 and 2012, the local public affairs programs *Adelante Chicago* and *People to People* were two of Horowitz's four syndicated programming examples. These programs were not syndicated shows, but rather were locally produced public affairs programs that do not come within the Program Suppliers category. Dr. Gray categorized both *Adelante Chicago* and *People to People* as CTV titles in his viewing study. *See* Appendix B.
- ✓ The syndicated series 30 Rock was used as an example in the 2011-13 surveys. 30 Rock did air on WGNA in all three years. However, 76 percent of the over 1,800 30 Rock airings on WGNA in 2011-13 were not compensable and Horowitz did not give any indication of this fact to its respondents. In addition, it was misleading to refer to 30 Rock as an "example" in either 2012 or 2013 since this was the only compensable syndicated series on WGNA in both years. Referring to the series as an example suggests to respondents that there are additional series that they should be considering in this category when in fact the remainder of the category consisted only of paid programming (infomercials) and two "one-time" specials shown in 2012.
- ✓ In 2011, the syndicated series *Cheers* was used as an example. While a total of 500 airings of this program were shown on WGNA in 2011, only one of these airings was compensable.
- ✓ Also in 2011, Horowitz used the comedy series *Just Shoot Me* as an example. Only three compensable airings of this program occurred on WGNA in 2011, and all three were shown on the same day.
- ✓ In 2010, Curb Your Enthusiasm and Smash Cuts were two of the three examples used by Horowitz. WGNA televised Curb Your Enthusiasm 193 times in 2010 and Smash Cuts 74 times that year. None of these telecasts was compensable. Moreover, referring to the third program listed (Legend of the Seeker) as an example was misleading since this was the only compensable syndicated series that aired on WGNA in 2010.
- *iii. Movies*. Table 2 above shows that Horowitz WGN-only respondents allocated an average of 18.1% to Movies, compared with a 14.5% average allocation from Bortz WGN-only respondents. In my opinion, the different allocations are attributable to the misleading examples of Movies that that the Horowitz surveys provided. The Horowitz description of this program type for WGN-only Systems was as follows:

2010: "Movies such as feature films, Movies of the Week, and specials broadcast on WGN. Examples include movies such as *No Country for Old Men, The Matrix, Bridget Jones's Diary*, and *The Sixth Sense.*" (See Bates Nos. 003908-003915)

2011: "Movies such as feature films, Movies of the Week, and specials broadcast on WGN. Examples include movies such as *Kingpin*, *The Green Mile*, *Bridget Jones's Diary*, and *102 Dalmatians*." (*See* Bates Nos. 003925-003931)

2012: "Movies such as feature films, Movies of the Week, and specials broadcast on WGN. Examples include movies such as *Heist*, *A Walk to Remember*, *The Lord of the Rings: The Fellowship of the Ring*, and *A Walk in the Clouds.*" (See Bates Nos. 003982-003989)

2013: "Movies such as feature films, Movies of the Week, and specials broadcast on WGN. Examples include movies such as *Gladiator*, *The Lord of the Rings: The Return of the King*, and *Home Alone 2: Lost in New York.*" (See Bates Nos. 004002-004009)

Despite the apparently self-explanatory nature of the Movies program type, Horowitz provided three "such as" descriptions of "types" of movies, including "feature films," "Movies of the Week," and "specials." In addition, depending on the year, between three and four specific movie titles were provided as examples. Beyond this descriptive "overkill," problems with the WGN-only question design for this program type are summarized in Table 6 below and the subsequent discussion:

Table 6. Horowitz WGN Only Examples, Movies

	Number of	Total	Compensable		
	Movie	WGNA	WGNA	Percent	
Year	Examples	Movies	Movies	Compensable	Comments
2010	4	286	56	20%	Compensable movies aired in overnight hours
2011	4	227	24	11%	Compensable movies aired in overnight hours
2012	4	260	4	2%	Movie "examples" were the only compensable movies on WGNA
2013	4	209	4	2%	Movie "examples" provided did not air on WGNA

✓ In 2010, WGNA televised 286 movies, only 20% of which were compensable; in 2011, WGNA televised 227 movies, less than 11% of

which were compensable. No information was provided in the Horowitz surveys to indicate that that the vast majority of all movies shown on WGNA in the years 2010-11 were non-compensable, or that nearly all of the compensable movies shown aired during overnight hours (i.e., between 1:00 AM and 5:00 AM).

- ✓ In 2012, there were only four compensable movies on WGNA for the entire year. These four movies were used as the Horowitz examples. This was misleading since these were not "examples" but rather constituted the station's entire compensable movie lineup for that year. This is especially problematic considering that there were 256 non-compensable movie airings on WGNA in 2012.
- ✓ In 2013, there were also only four compensable movies aired on WGNA for the entire year and the Horowitz examples were even more problematic. Specifically, the three examples used by Horowitz were not compensable, and in fact did not appear on WGNA. Further, the examples were misleading in that they consisted of two Academy Award Best Picture winners (*Lord of the Rings: Return of the King* and *Gladiator*) and the second installment in a very popular movie franchise (*Home Alone 2: Lost in New York*). By comparison, the compensable movies on WGNA in 2013 were *Brother Bear 2*, *Dan in Real Life, Romeo Must Die*, and *Hannah Montana and Miley Cyrus: Best of Both Worlds Concert*. Once again, the problem with the Horowitz movie examples was exacerbated by the fact that there were 205 non-compensable movie airings on WGNA in 2013.

b. WGN/PTV-only Systems

As noted above, 92 systems or approximately 13 percent of those responding to the 2010-13 Horowitz surveys carried WGNA as their only commercial distant signal along with one or more PTV signals. The program descriptions and examples that were employed for these WGN/PTV-only Systems differed in significant respects from those that were used in the WGN-only surveys – even though WGNA was the only signal for which the program types (other than PTV) had any applicability. ¹⁴ The program examples and descriptions that Horowitz provided to

¹⁴ Note that because public television and Canadian signals each had a dedicated category in the Horowitz survey, their presence is not relevant for any of the other programming categories.

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the WGN/PTV-only respondents for "Other Sports" and Syndicated Series were misleading in several respects.

i. "Other Sports." As noted above, the Horowitz surveys had a "Live Team Sports" as well as an "Other Sports" program type. "Live Team Sports" was always read first to respondents. Respondents for WGN/PTV-only Systems were then read the following "Other Sports" description:

"Other sports programming broadcast on [WGN]. Examples include NASCAR auto races, professional wrestling, and figure skating broadcasts." (*See* Bates Nos. 003882-003891; 003932-003940; 003972-003981; and 004010-004018)

For the years 2012 and 2013, none of the programs used as examples were televised by WGNA. In 2011, only professional wrestling was televised by WGNA but it was not compensable; and in 2010 only professional wrestling was televised by WGNA and only two of the telecasts were compensable. *See* page 17 above. The use of these program examples was misleading in at least three additional respects. First, some respondents may have mistakenly believed that, because these programs were used as examples, they must have been carried and compensable on WGNA. Second, some respondents may have been aware that these programs were not televised by and/or not compensable on WGNA, but may have become confused about whether they should still include the example programming when allocating value. And finally, even if respondents were aware that these particular programs were not televised by and/or compensable on WGNA, they might have incorrectly assumed that there must have been a significant amount of additional "Other Sports" programming on WGNA because a distinct

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PTV and Canadian stations were not read to respondents when respondents were asked about the other categories.

category and three specific examples were given for this programming type. In essence, the only way for a respondent to accurately respond for "Other Sports" (especially in 2012 and 2013) was for them to deduce based on their knowledge and experience that the inclusion of the program type was the equivalent of a "trick question."

ii. Syndicated Series. Horowitz WGN/PTV-only respondents allocated an average of 19.4% to this program type, compared with 14.3% among Bortz WGN/PTV-only respondents. In my opinion, this difference was attributable to the misleading examples of Syndicated Series provided by the Horowitz interviewers. The Horowitz description of Syndicated Series for WGN/PTV-only Systems was as follows:

2010-11: "Syndicated series such as sitcoms, dramas, children's shows, talk shows, reality shows, game shows, and other series broadcast on [WGN]. Examples include programs such as *Everybody Loves Raymond*, *Seinfeld*, *American Idol*, *Jeopardy*, and *The Oprah Winfrey Show*." (See Bates Nos. 003882-003891 and 003932-003940)

2012-13: "Syndicated series such as sitcoms, dramas, children's shows, talk shows, reality shows, game shows, and other series broadcast on [WGN]. Examples include programs such as *Everybody Loves Raymond*, *Seinfeld*, *American Idol*, *Jeopardy*, and *The Dr. Oz Show*." (*See* Bates Nos. 003972-003981 and 004010-004018)

None of the programs listed as examples appeared on WGNA in any of the years from 2010-13. Moreover, as mentioned previously, four of the six syndicated program types listed did not appear as compensable programs on WGNA in any of the four survey years, i.e., WGNA televised no compensable Game Shows, Reality Shows, Talk Shows or syndicated Children's Shows in any of the four years.

c. Other Cable Systems

The program examples that the Horowitz surveys provided for the remaining 383 respondents were also problematic. The Horowitz interviewers told each of these respondents

that examples of "Other Sports" included "NASCAR auto races, figure skating and wrestling." However, at least one-third of these respondents' systems carried none of this programming on a compensable basis in 2011-13.

IV. Testimony of Dr. Erkan Erdem

A. Dr. Erdem's Analysis of the WGNA Compensable Programming Issue Is Predicated upon a Misunderstanding of the Underlying Data

Dr. Erdem, on behalf of the Devotional Claimants, acknowledges that the "results of the Bortz survey allow us to approximate the behavior of profit-maximizing CSOs as they consider the mix of programming they can possibly offer to their potential or actual subscribers." *See* March 9, 2017 Amended Testimony of Erkan Erdem (Erdem amended testimony) at 5. Dr. Erdem also suggests that the Devotional Claimants should not receive less than the share reflected for the Devotionals in the 2010-13 Bortz surveys (*id.* at 12) – even though the Judges concluded that the Devotionals should receive less than their share in the 2004-05 surveys based on the compensability of programming on WGNA. *See* page 14 above.

Compensability of programming on WGNA is a salient issue for the Devotional Claimants because most of the religious programming televised by WGNA in 2010-13 was not aired simultaneously on WGN Chicago; thus, most of the Devotional programming on WGNA (like most of the Program Suppliers programming on WGNA) is not compensable. *See* Table 7 below.

Table 7. Compensability of Devotional Programming on WGNA, 2010-13

	Total:					Total:
	2004-05	2010	2011	2012	2013	2010-13
WGNA Compensable Devotional Programming Hours	12.0	65.0	53.0	31.5	36.0	185.5
WGNA Total Devotional Programming Hours	120.5	633.5	536.5	449.5	505.5	2125.0
Compensable % of Total Devotional Hours	10.0%	10.3%	9.9%	7.0%	7.1%	8.7%

^{*}Reflects programming sample reviewed by CTV witness Richard V. Ducey.

Source: CTV 2004-05 Direct Case, Statement of Richard V. Ducey; and Bortz Media analysis of Gracenote/TMS programming data for WGNA and WGN Chicago.

In the 2004-05 proceeding, the Judges found that the Bortz survey results should be regarded as a "ceiling" on the Devotional share "because of the presence of devotional programming on WGN that is also non-compensable." *See* 2004-05 Distribution Order at 16. As explained in the Bortz Report, while the approach used in the 2010-13 Bortz surveys mitigates the WGN compensability issue, it does not fully account for the impact of this issue and the Bortz results for the Devotional category (and Program Suppliers) should still be regarded as a "ceiling." *See* Bortz Report at 47-49; 2004-05 Distribution Order at 16.

Dr. Erdem assesses the compensability of programming on WGNA using his own definition of compensability (i.e., programming with exactly the same start time, end time and duration as reported in the Gracenote data he reviewed). Under this approach, he incorrectly concludes that a portion of JSC programming on WGNA was not compensable in 2010-13. That conclusion reflects a misunderstanding of the Gracenote programming schedule data upon which his analysis relies – particularly as it applies to live programming (such as JSC telecasts) as well as programming scheduled to air in time periods immediately following live telecasts. Gracenote data in some cases represented the "pre-air" schedule provided to Gracenote by the station (which might anticipate that, for example, a Major League Baseball telecast will last 180 minutes or three hours); and in other instances the Gracenote data consisted of the "as-run" or

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¹⁵ As shown previously in Table 3, the unweighted average Bortz survey allocation among WGN-only Systems was 8.0% percent for Devotionals in 2004-05 (when respondents were not provided with information about compensability), but declined to about half that level (3.9%) in 2010-13 when respondents considered only WGNA compensable programming.

¹⁶ Dr. Erdem acknowledged that, "using the JS' Claimants definition of compensable" 100% of JSC programming is compensable. Erdem amended testimony at 9 n.19. Under the "JSC definition," a non-network program is compensable if it is retransmitted by a cable system simultaneously with the airing of that program by a broadcast station. As Dr. Erdem also acknowledged, Section 111 of the Copyright Act defines compensable programming as programming which is transmitted "simultaneously with the primary transmission." Erdem amended testimony at 4.

"post-air" schedule (which would indicate the actual length of the game telecast rather than an estimate, and could affect whether the programming scheduled to air afterward was actually shown or in some cases may have been joined in progress). Moreover, the Gracenote data for WGNA sometimes reported the initial five to ten minutes of a game telecast as a distinct "pregame show" (e.g., *Lead-Off Man* for the Chicago Cubs) and/or the last few minutes of the broadcast as a distinct "post-game show" (e.g., *10th Inning* for the Cubs), while the WGN Chicago Gracenote schedule may have shown the telecast of the same MLB game as occupying the entire time block.

For purposes of determining compensability, this may complicate matters – but only with respect to *how many minutes* of compensable programming should be assigned to a particular game telecast – *not to whether the game telecast is compensable*. JSC considers only the overlapping game telecast itself as compensable JSC programming, and Bortz has allocated pregame and post-game minutes identified in either the WGNA or WGN Chicago data set to CTV. Dr. Erdem's decision to consider entire telecasts where this situation exists to be non-compensable is incorrect.

Dr. Erdem uses this incorrect conclusion about compensability as his sole basis for stating that the impact of non-compensable WGNA programming in the Bortz survey should be extended to JSC and CTV as well as Program Suppliers and the Devotional Claimants. As the Judges concluded in the 2004-05 proceeding, the respondents' consideration of non-compensable programming on WGNA means that the Bortz survey results (for 2010-13 as in 2004-05) should be regarded as a ceiling for Program Suppliers and the Devotional Claimants (whose content on WGNA was mostly non-compensable) – and a floor for JSC and CTV (whose content on WGNA was 100 percent compensable).

B. Dr. Erdem Misunderstands the Nature and Effect of Changes that the Horowitz Surveys Made to the Bortz Methodology

Dr. Erdem asserts that the repeated use of the terms "distant signals" and "distant broadcast stations" in the Horowitz surveys is an improvement over the language used in the Bortz surveys to describe the signals addressed in the survey. Dr. Erdem is wrong. The Bortz surveys intentionally seek to mask the fact that they relate to copyright royalties in order to avoid any potential concern by respondents that their answers could affect royalty rates. As such, the use of terms such as "distant signals," which some respondents may associate with copyright matters, is problematic – and certainly not an "improvement."

Similarly, Dr. Erdem's assertion that the Horowitz instruction to not assign value to programs that were substituted for WGN Chicago's blacked out programming "might be a slight enhancement" reflects a lack of understanding of the marketplace. As discussed above, unless a respondent resides in or near Chicago and could receive the WGN local signal off-air, it is improbable that he or she (despite their expertise in programming matters generally) would be familiar with the specific distinctions between the programming on WGNA – which they have direct access to – and WGN Chicago, which they do not have ready access to and would have little reason to have ever evaluated. Thus, including this instruction in the questionnaire:

(1) provided no additional information of value to the respondent; (2) provided even further evidence to certain respondents that the survey concerned copyright royalty matters; and (3) may have caused confusion or frustration among some respondents if these respondents felt they should be excluding some WGNA programming from consideration but did not know which programming to exclude.

Finally, Dr. Erdem correctly identifies that there were problems with the examples provided in the Horowitz survey, and that these problems may have biased the Horowitz results. But his analysis of this issue is cursory and understates the likely impact of these problems. See pages 18-28 above. He states that respondents were provided with examples for each of the Program Suppliers, JSC and Devotional Claimants Agreed Categories on WGNA that were either non-compensable or not broadcast on WGNA, and therefore concludes that all three Agreed Categories were "subject to the same imperfect approach." See Erdem amended testimony at 12. This is incorrect. While the Horowitz examples for JSC programming on WGNA were compensable and were in fact broadcast on WGNA, the Devotional examples overstated the presence and nature of compensable programming on WGNA in this Agreed Category and likely biased the Horowitz responses in favor of the Devotional Claimants – as was the case with the Program Suppliers examples. See pages 18-28 above. Specifically, the Devotional examples used in the Horowitz WGN-only questionnaires were misleading because they included programs that aired on WGNA but were not compensable (Singsation! in 2011 and Creflo Dollar in 2013) or only partially compensable (Victory in Grace in 2012). Similarly, among Non-Network systems that carried WGNA as their only U.S. commercial distant signal, examples in all four years consisted of programs including Joel Osteen Ministry (never carried on WGNA); Kenneth Copeland Ministries (carried by WGNA in 2010 and 2011 on a noncompensable basis); and Creflo Dollar (carried by WGNA on a non-compensable basis in all four years).

V. Testimony of Linda McLaughlin and Dr. David Blackburn

A. The McLaughlin/Blackburn Reliance on Changes in Distant Subscriber Instances Is Misplaced Because Distant Subscriber Instances Are a Measure of Program Time And Not Program Value

In their initial testimony, Ms. McLaughlin and Dr. Blackburn concluded that PTV's share of the 2010-13 royalties should be 32% higher than its share of the 2004-05 royalties because PTV's share of "distant subscriber instances" had increased during this period from 12.1% to 15.9%. *See* December 21, 2016 Testimony of Linda McLaughlin and David Blackburn (McLaughlin/Blackburn testimony) at 10. A "distant subscriber instance" represents one distant signal being received by one cable system subscriber, without regard to how much the cable system paid to deliver (or the cable subscriber paid to receive) that signal. Based upon that change in distant subscriber instances, PTV requested an award of no less than 9.9% of the 2010-13 Basic Fund royalties (excluding the share awarded to the Music Claimants), a 32% increase over PTV's 2004-05 average award of 7.55% (excluding Music). *See* December 22, 2016 Written Direct Statement of Public Television Introductory Memorandum (PTV WDS) at 4. PTV did not request any 3.75 royalties because it is not eligible to share in such royalties. *See* PTV WDS at 4.

In the 1998-99 cable royalty distribution proceeding, a Copyright Arbitration Royalty

Panel ("CARP") determined that distant subscriber instances are a measure of relative

programming time and not relative programming value. Thus, the CARP refused to increase

PTV's share of the cable royalty fund over its 1990-92 level notwithstanding that PTV showed a

¹⁷ As shown in Appendix Table A-1, from 2010-13 only 15-17% of cable subscribers that had access to distant signals received one or more distant PTV signals. Further, 88% of the systems that carried distant PTV signals also carried at least one commercial distant signal.

doubling of its share of distant subscriber instances between 1990-92 and 1998-99. Consistent with that precedent and my experience that program "volume" does not equate to program value, I do not believe that PTV's 2010-13 share should be tied to increases in distant subscriber instances, as McLaughlin/Blackburn have suggested.

B. The McLaughlin/Blackburn Adjustments of the 2010-13 Bortz Results Do Not Support the Award Requested by PTV

The 2010-13 Bortz surveys, like prior Bortz surveys, did not seek responses from sample systems that carried PTV signals as their only distant signals.²⁰ As explained in the Bortz Report at 14 and A-10 to A-11, our view has been and remains that asking respondents to allocate "relative value" to a single category of programming is not a valid application of the constant sum survey methodology; and it has the potential to create confusion among respondents. Nevertheless, we have recognized that some adjustment to the specific point estimates in the

¹⁸ See October 21, 2003 Report of the Copyright Arbitration Royalty Panel to the Librarian of Congress ("1998-99 CARP Report") at 56-57 (finding that "[b]oth subscriber instances studies offered by [PTV's expert] Dr. Johnson suffer from the same fundamental infirmity – they attempt to equate programming *volume* with programming *value*") (emphasis in original); *id.* at 57 ("We view Dr. Johnson's change in subscriber instances theory as relatively unuseful because it is based on a measure of time, not value. . . . Changes in measures of relative time do not prove changes in relative value"). The 1998-99 CARP also attributed weight to PTV's share of fees generated. *Id.* at 60-65. PTV's share of 2010-13 fees generated amounted to 4.6%. Bortz Report at 27. PTV's 2010-13 average Bortz share of 5.1% is slightly higher than PTV's share of fees generated, and is also higher than PTV's average 2004-05 Bortz share of 3.6%.

¹⁹ It should be noted that WGNA's share of distant subscriber instances is substantially higher in 2010-13 (at 59% of total distant subscriber instances) than it was in 2004-05 (50%). In absolute terms, the average yearly number of WGNA distant subscriber instances increased by more than six million over this period. This dwarfs the absolute increase of just under 2.6 million distant subscriber instances for PTV distant signals.

²⁰ The average number of Form 3 PTV-only Systems declined from 63.5 in 2010 to 42.0 in 2013. Over the four year period, this represented about five percent of the Form 3 systems that carried at least one distant signal. The initial Bortz survey samples for each year included an average of 13 PTV-only Systems, while the Horowitz samples also included an average of 13. As discussed further below, PTV-only Systems were over-represented among Horowitz survey respondents, due largely to very high response rates among the sampled PTV-only Systems.

2010-13 Bortz surveys is appropriate to account for the exclusion of systems that carried PTV signals (or Canadian signals) as their only distant signals. *See* Bortz Report at 7-8.

Ms. McLaughlin and Dr. Blackburn have adjusted the 2010-13 Bortz survey results to account for the fact that the Bortz surveys do not include valuations from PTV-only (and Canadian-only) Systems. Their adjustment follows the approach that Ms. McLaughlin offered in prior cable royalty distribution proceedings and that the Judges accepted in the 2004-05 proceeding. See 2004-05 Distribution Order at 27. It assumes that certain of the PTV-only Systems in the Bortz sample would have responded to the 2010-13 Bortz surveys (consistent with the actual Bortz response rates) and that they would have allocated 100% to the PTV category. See April 17, 2017 Amended Testimony of Linda McLaughlin and David Blackburn (Amended McLaughlin/Blackburn testimony) at 14. The McLaughlin/Blackburn adjustments raise the PTV share in the 2010-13 Bortz surveys from an average of 5.1% to between 7.5% and 8.5% for the four-year period. See Amended McLaughlin/Blackburn testimony at 16; Table 8 below.²¹ McLaughlin/Blackburn also note that the average 2010-13 augmented share of 8.0% is approximately 31% higher than the 2004-05 Bortz augment share of 6.1-6.2%. See Amended McLaughlin/Blackburn testimony at 15-16. McLaughlin/Blackburn do not include in their testimony a year-by-year breakdown of their adjustment. That breakdown is set forth below in Appendix Table A-2.

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²¹ Chart 3 on page 16 of the Amended McLaughlin/Blackburn testimony shows a range for the PTV (7.5-8.5%) and Canadian (1.2-2.2%) categories. The ranges reflect alternative treatments of systems that carried both PTV and Canadian signals as their only distant signals. The higher value for PTV (and the corresponding lower value for the Canadian category) attributes 100% of the value accorded these systems to PTV, while the lower value for PTV (and corresponding higher value for the Canadian category) attributes 100% of the value accorded these same systems to the Canadian category.

Table 8. Unadjusted Bortz and McLaughlin/Blackburn Augmented Bortz Survey Response Comparison, 2010-13

	Average	e: 2010-13
	Unadjusted	McLaughlin/ Blackburn Augmented
Program Type	Bortz	Bortz*
Live Team Sports	38.2%	36.6%
News	20.6%	19.7%
Syndicated	14.7%	14.0%
Movies	16.3%	15.6%
Devotional	4.6%	4.4%
PTV	5.1%	8.0%
Canadian	0.5%	<u>1.7%</u>
TOTAL	100.0%	100.0%

Columns may not add to total due to rounding.

The results of the 2010-13 Horowitz surveys suggest that it is incorrect to assume, as McLaughlin/Blackburn did, that PTV-only Systems would allocate 100% of their distant signal program budget to the PTV category. As explained below, most of the Horowitz PTV-only respondents allocated less than 100% to PTV, even though PTV was the only distant signal category carried by those systems. It may be that the respondents were confused by the Horowitz question (which, as noted above, is one reason why Bortz has never surveyed PTV-only Systems). It also is possible that the Horowitz respondents, all of whom represented

^{*}Utilizes average of two allocation methodologies used by McLaughlin/Blackburn to account for systems that carried both PTV and Canadian signals as their only distant signals.

"minimum fee" systems, simply did not value the PTV signals as highly as their minimum fee.²² In any event, accounting for the Horowitz survey results would produce the revised "augmented" 2010-13 shares set forth in Table 9 rather than the "augmented" shares suggested by McLaughlin/Blackburn. A year-by-year breakdown is set forth in Appendix Table A-2.

Table 9. Unadjusted Bortz and Revised McLaughlin/Blackburn Augmented Bortz Survey Response Comparison, 2010-13

	McLau Black Unadjusted Bortz Bort 38.2% 37.1 20.6% 20.1 14.7% 14.2 16.3% 15.8		
	The directed	Revised McLaughlin/ Blackburn	
Program Type	· ·	Augmenteu Bortz*	
Live Team Sports	38.2%	37.1%	
News	20.6%	20.1%	
Syndicated	14.7%	14.2%	
Movies	16.3%	15.8%	
Devotional	4.6%	4.4%	
PTV	5.1%	6.6%	
Canadian	0.5%	1.7%	
TOTAL	100.0%	100.0%	

Columns may not add to total due to rounding.

As mentioned above, McLaughlin/Blackburn also argue that because their "augmented" 2010-13 Bortz share for PTV is about 31% higher than PTV's "augmented" share in the 2004-05

^{*}Utilizes average of two allocation methodologies used by McLaughlin/Blackburn to account for systems that carried both PTV and Canadian signals as their only distant signals.

²² All cable systems are required to pay a minimum royalty fee regardless of whether they carry any distant signals. The minimum fee is based on a system carrying 1.0 Distant Signal Equivalents (DSE). Thus, cable systems that carry a combination of fully or partially distant signals such that their aggregate DSE value is equal to 1.0 or less pay only the minimum fee.

Bortz surveys, PTV's 2010-13 award should be about 31% higher than its 2004-05 award of 7.55%, i.e., 9.9%. The revised "augmented" share is 7% higher, not 31%. Furthermore, in their 2004-05 Distribution Order, the Judges did not consider prior Bortz survey results or prior PTV "augmented" shares in evaluating the McLaughlin methodology. Rather, they considered the McLaughlin "augmented" Bortz shares for the instant years (2004-05) on their own merits, and then calculated the PTV share of the Basic Fund by accounting for the fact that PTV does not participate in the 3.75 fund (i.e., they divided the McLaughlin augmented shares by the percent of Form 3 royalties in the Basic Fund – 85.0% in 2004 and 85.9% in 2005). In doing so, they accepted the recommendations made by both PTV and certain other parties. *See* 2004-05 Order at 27, *citing* Settling Parties' Proposed Findings of Fact at Paragraph 317. As shown on Table 10 below, using the same approach for 2010-13 (and the Horowitz results discussed above) results in a PTV share of 7.7% – less than the 9.9% suggested by McLaughlin/Blackburn.²³

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²³ The Judges made a small further adjustment to PTV's share to account for the fact that the Devotional Claimants received less than their Bortz survey share. *See* 2004-05 Order at 28. However, because the Devotional Claimants' Bortz survey share in 2010-13 is less than it was in 2004-05, such an adjustment would still leave the PTV share below the requested 9.9%.

Table 10. Unadjusted Bortz and Revised
McLaughlin/Blackburn Augmented Bortz Share of Basic Fund,
2010-13

	Average	e: 2010-13
		Revised McLaughlin/ Blackburn Augmented
	Unadjusted	Bortz Basic
Program Type	Bortz	Fund Share*
Live Team Sports	38.2%	36.7%
News	20.6%	19.8%
Syndicated	14.7%	14.0%
Movies	16.3%	15.7%
Devotional	4.6%	4.4%
PTV	5.1%	7.7%
Canadian	0.5%	1.7%
TOTAL	100.0%	100.0%

Columns may not add to total due to rounding.

C. Design Flaws Inflate PTV's Valuation in the 2010-13 Horowitz Surveys

McLaughlin/Blackburn also rely upon the 2010-13 Horowitz surveys, stating that they reflect a "substantially higher share" for PTV than the augmented 2010-13 Bortz surveys, i.e., 12.9% in Horowitz compared to the 7.5%-8.5% in the unrevised McLaughlin/Blackburn augmentation.²⁴ *See* Amended McLaughlin/Blackburn testimony at 17, and Appendix Table A-2

^{*}Utilizes average of two allocation methodologies used by McLaughlin/Blackburn to account for systems that carried both PTV and Canadian signals as their only distant signals.

McLaughlin/Blackburn suggest that a reason for the higher value attributed to the PTV category in the Horowitz survey as compared with the Bortz survey may have been that certain large royalty payers responded to the Horowitz survey but did not respond to the Bortz survey. See McLaughlin/Blackburn testimony at 17. This factor is only relevant if the royalties paid by Footnote continued on next page

for year-by-year percentages. The "higher" PTV share, however, is attributable to design flaws in the 2010-13 Horowitz surveys that inflate PTV's share.

1. Over-Representation of PTV-only Systems

The Horowitz survey design sought to include cable systems that carried PTV signals as their only distant signals (PTV-only Systems). In the allocation question for these types of systems, interviewers asked respondents about only one type of programming (i.e., the PTV category). The respondent was asked to estimate the relative value to their system of that programming type, and only that type, and was first asked to write the PTV description down before providing an answer. The question read to the respondent is presented below. (2013 version). *See* Horowitz testimony at 32-37.

"Now, considering everything we have been discussing, I would like you to estimate the relative value to your cable system of each type of programming actually broadcast during 2013 by [PTV station(s)]. We would like you to be very precise about this; can I ask you first to write down the types of programming on these distant stations? Please write them down in the order I read them. Here they are:

"Programs broadcast only on PBS station(s) ____. Examples include Masterpiece Classic: Downton Abbey Season III, Masterpiece Mystery!, PBS NewsHour, and Sesame Street."

Assume you had a fixed dollar amount to allocate for the programming actually broadcast during 2013 on [PTV station(s)]. Considering the value of the

cable systems carrying PTV were under-represented in the Bortz survey respondent base. The Bortz and Horowitz survey both employ stratified random samples. To obtain survey results that are projectable to the Form 3 universe, survey responses are weighted by strata and royalty. I have analyzed the representation of systems carrying PTV distant signals among Bortz survey respondents and have determined that the weighted royalties paid by the responding systems carrying PTV signals over the 2010-13 period correspond closely to the total royalties actually paid by all systems carrying PTV signals in the entire universe of Form 3 cable systems. *See* Appendix Table A-5. As such, the McLaughlin/Blackburn reference to large royalty payers does

not explain the reason for the higher value attributed to PTV in the Horowitz surveys.

Footnote continued from previous page

programs broadcast only on PBS station [...] to your cable system, what percentage, if any, of the fixed dollar amount would you allocate for this type of programming?

In formulating your percentage, please think about all of the factors we have been discussing, including using this programming in your advertising and promotions in 2013 to attract and retain customers, the importance of this programming to you and your subscribers, and any other considerations you may have.

Remember you are only estimating the relative value of each type of programming actually broadcast in 2013 on: [PTV station(s)].

Once you are done, we will review your allocations together. Let me know when you are done.

Across all the distant stations you carry, and considering the value to your cable system, what percentage, if any, of the fixed dollar amount would you allocate to:

"Programs broadcast only on PBS station(s) ____. Examples include Masterpiece Classic: Downton Abbey Season III, Masterpiece Mystery!, PBS NewsHour, and Sesame Street."

As noted above, three quarters of the respondents to the PTV-only version of the Horowitz survey did not make a 100 percent value allocation to this program type even though this was the only type provided to them as a response option.²⁵ *See* Table 11 below.

Table 11. Allocation Summary for Horowitz Responding PTV-Only Systems, 2010-13

					Total:
Completed Surveys	2010	2011	2012	2013	2010-13
PTV-Only Systems	9	13	5	13	40
Allocated 100%	8	0	0	2	10
Allocated Less Than 100%	1	13	5	11	30
Less Than 100% % of Total	11.1%	100.0%	100.0%	84.6%	75.0%
Average Allocation	91.1%	54.2%	22.0%	25.4%	49.1%

²⁵ As noted above, respondents may have been confused by the question in these cases, since it makes little sense to ask for an "allocation" of value when there is only one category.

However, in calculating weighted results for the Horowitz survey, Dr. Frankel created "e-answers" for these systems in order to assign 100% of their royalties to PTV, rather than using the respondents' actual answers to the surveys. ²⁶ Using the actual responses of these systems would lower the Horowitz PTV allocations by 1.7 percentage points in 2013, 0.7 percentage points in 2012, 1.9 percentage points in 2011 and 0.3 percentage points in 2010.

Stated otherwise, the weighted Horowitz results do not directly reflect the Horowitz findings for these systems, but rather incorporate an adjustment that mirrors the McLaughlin/Blackburn augmentation (see above) that has been applied to the Bortz survey results in prior proceedings. However, the McLaughlin/Blackburn augmentation assures that an appropriate weight is applied to the PTV-only (and Canadian-only) systems by attributing weights to them that are consistent with the strata distribution of these systems as well as the overall survey response rates.²⁷ The Horowitz/Frankel methodology, on the other hand, relied on the actual response rates achieved by Horowitz among these systems. In so doing, Horowitz/Frankel over-weighted the PTV-only Systems by an average of approximately one percentage point per year.²⁸ This overweighting had the effect of further inflating the PTV share in the survey results reported by Horowitz.

The approach used by Dr. Frankel is not described in his testimony, nor is the use of "eanswers" acknowledged. However, the methodology employed is evident from a review of underlying documents. See MPAA_2010.f90, MPAA_2011.f90, MPAA_2012.f90 and MPAA_2013.f90.

²⁷ Only one Canadian-only system responded to the survey over the four-year period (in 2011). Therefore, inclusion of a Canadian-only questionnaire was of no consequence to the Horowitz survey findings.

²⁸ I asked CDC to calculate the weighted percentage of total royalties accounted for by PTV-only respondents to the Horowitz surveys. On a weighted basis, CDC calculated that the PTV-only respondents to the Horowitz surveys accounted for an average of 3.2% of total royalties. By comparison, the PTV-only Systems included in the CDC Form 3 universe data used in the Horowitz surveys and produced by Program Suppliers accounted for an average of just 2.15% of Footnote continued on next page

2. Inflation of PTV Share from a Single Outlier Response

The PTV share in the Horowitz surveys is largely dependent upon the responses from a single MSO whose respondent in each year valued the PTV category much more highly than other respondents. In each year, the respondent for that MSO alone accounted for between 15% and 23% of the responses to the Horowitz survey.²⁹ The surveys accounted for by this MSO's respondent in each year far outnumbered those accounted for by any other unique Horowitz respondent in that year. Moreover, the allocations to the PTV category for this single MSO averaged over 45% for 2010-2013 – a level that is more than four times the median Horowitz PTV allocation of 10% and is a clear outlier in relation to the allocations typically assigned to the category. As such, each year's Horowitz findings for the PTV category are very sensitive to the presence (or lack thereof) of a single individual. Specifically, if the responses of one respondent were removed from the Horowitz results each year, the 2010-13 average Horowitz PTV allocation would decline by almost five percentage points.

3. Valuation of Exempt Signals For which No Royalty Was Paid

In the Bortz surveys, the distant signals about which each respondent is questioned are identified on the hard copy survey questionnaires (redacted copies of which have been produced by JSC in these proceedings); Bortz identified these distant signals by reviewing the statements

Footnote continued from previous page the total Form 3 universe royalties. *See* "JSC_CDC Analysis Version of APKS_SUMMARYTABLE_2010-2013_5SEPT17.xlsx."

²⁹ Several other Horowitz survey respondents also answered on behalf of multiple systems. Certain respondents to the Bortz survey answered on behalf of multiple systems as well, although none of the Bortz respondents accounted for more than 7% of the responses in any given year. *See* Appendix Tables A-3 and A-4. Moreover, Bortz respondents were in all cases required to complete a separate survey for each system (even if its signal carriage pattern was identical to another system for which they were responsible), which I understand was not the case with the Horowitz respondents.

of account that the sample systems filed with the Copyright Office. Program Suppliers, on the other hand, have not produced completed hard copy questionnaires identifying the distant signals that each Horowitz respondent was asked to value. Rather, in response to discovery requests from JSC, Program Suppliers advised that the Horowitz interviewers relied upon electronic spreadsheets that Cable Data Corporation (CDC) had created and that identified distant signals. A sample of these spreadsheets for the years 2010-13 is contained in Appendix C.

A review of these spreadsheets discloses an important difference between the years 2010-11, on the one hand, and 2012-13, on the other hand. Specifically, the 2012-13 spreadsheets list many signals that are identified in column T (Basis of Carriage) as having "exempt" status (i.e., as signals that cable systems carried without paying any Section 111 royalty, while the 2010-11 spreadsheets do not list any "exempt" distant signals).³¹

The Horowitz testimony (and underlying documents produced by Program Suppliers) do not indicate one way or another whether interviewers asked the Horowitz respondents in 2012 and 2013 about all signals listed in the CDC spreadsheet for a given system, or whether they somehow determined that the signals identified by the CDC spreadsheets as "exempt" should be excluded. However, at least three Horowitz respondents in 2012 were asked to assign value to the PTV program type when the only PTV signals listed in the CDC spreadsheet were identified

See April 12, 2017 letter from L. Plovnick to R. Garrett at 6-8.

When Congress amended Section 111 in 2010, it determined that CSOs should not be required to pay royalties for multicast signals in certain circumstances, including where carriage was made pursuant to an agreement entered into prior to June 30, 2009 between a trade association representing cable systems and an association representing broadcast stations. *See* https://www.copyright.gov/docs/stela/stela-faq.html. In 2005 the Association of Public Television Stations (APTS) and the (then) National Cable & Telecommunications Association (NCTA) entered into an agreement concerning the carriage of PTV station digital multicast signals. *See* https://current.org/wp-content/uploads/archive-site/dtv/dtv0502ncta.shtml.

as "exempt."³² See Appendix D. This raises a question about whether all respondents for whom exempt signals were listed were asked about those signals. This issue is important with respect to the Horowitz PTV allocation because almost three-quarters of the multicast signals identified by CDC as exempt are PTV multicast signals ("Exempt PTV Multicast Signals"). If Horowitz respondents in 2012 and 2013 were asked to ascribe value to Exempt PTV Multicast Signals for which they paid no Section 111 royalty, this would have represented more than 400 such signals during those two years.³³ Looked at another way, of the 244 Horowitz cable systems that carried at least one PTV distant signal, 104 or 43% would have been asked to value at least one PTV multicast distant signal for which they paid no royalty.³⁴

VI. Adjustments to the 2010-13 Horowitz Surveys

As discussed above, there are substantial problems with the design of the Horowitz surveys. Primary among these are the addition of a third Program Suppliers category ("Other Sports") that does not warrant inclusion as a distinct category, and the failure to even partially account for the compensability of programming on WGNA. In addition, the Horowitz surveys used examples that serve to bias the Horowitz survey results in favor of Program Suppliers (and the Devotional claimants), and contain representation and survey execution errors that combine to overstate the PTV allocation.

APKS_MASKEDSAMPLE_distant_carriage_with_boc_and_ds_and_current_ds_and_stratum_b oc_ExemptSep_2010_2013.xlsx.

³² Bortz Media analysis of the CDC created document

³³ *Id*.

³⁴ The multicast signals CDC identified as exempt also included exempt commercial signals. Of the 691 (410 in 2012 and 2013) Horowitz cable systems that carried at least one commercial distant signal, 43 or 6.2% (10.5% in 2012 and 2013) would have been asked to value at least one commercial multicast distant signal for which they paid no royalty.

The issues related to improper examples and the creation of an "Other Sports" category are most pronounced among surveys of WGN-only Systems and WGN/PTV-only Systems.

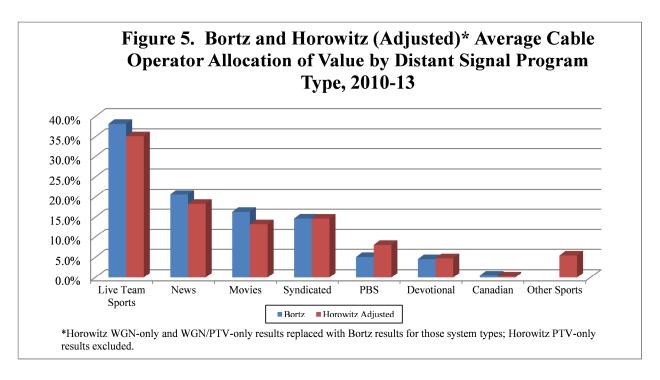
There is a substantial difference in the valuations given by Horowitz and Bortz WGN-only and WGN/PTV-only respondents. *See* page 11 above. For the reasons discussed above, none of the responses provided by the Horowitz respondents for WGN-only and WGN/PTV-only Systems should be accorded any weight; rather, the Bortz WGN-only and WGN/PTV-only responses provide a better estimate of relative valuations among these respondents. I have substituted the Bortz WGN-only and WGN/PTV-only responses for the Horowitz WGN-only and WGN/PTV only responses, and also excluded the Horowitz PTV-only responses in order to provide a basis for comparing the Horowitz results with those obtained in the Bortz surveys. Table 12 and Figure 5 below show this comparison.

Table 12. Horowitz (Adjusted)* and Bortz Survey Response Comparison, 2010-13

	20	10	20	11	20	12	2013		Average	2010-13
Program Type	Horowitz	Bortz	Horowitz	Bortz	Horowitz	Bortz	Horowitz	Bortz	Horowitz	Bortz
Live Team Sports	38.1%	40.9%	32.7%	36.4%	32.4%	37.9%	37.5%	37.7%	35.2%	38.2%
News	19.5%	18.7%	15.6%	18.3%	19.6%	22.8%	18.5%	22.7%	18.3%	20.6%
Syndicated	15.6%	16.0%	17.5%	17.4%	13.4%	13.5%	12.2%	11.8%	14.7%	14.7%
Movies	15.3%	15.9%	15.4%	18.6%	11.6%	15.3%	10.8%	15.5%	13.3%	16.3%
Devotional	4.4%	4.0%	4.9%	4.5%	5.5%	4.8%	4.4%	5.0%	4.8%	4.6%
PTV	2.9%	4.4%	7.0%	4.7%	11.0%	5.1%	11.4%	6.2%	8.1%	5.1%
Canadian	0.0%	0.1%	0.0%	0.2%	0.9%	0.6%	0.4%	1.2%	0.3%	0.5%
Other Sports	4.2%	NA	7.0%	<u>NA</u>	5.6%	NA	5.0%	NA	<u>5.5%</u>	NA
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Columns may not add to total due to rounding.

*Horowitz WGN-only and WGN/PTV-only responses replaced with Bortz results for those system types; Horowitz PTV-only systems excluded. Source: Bortz Report at 3; and JSC_CDC Analysis Version of APKS_SUMMARYTABLE_2010-2013_5SEPT17.xlsx



The Horowitz errors underlying the PTV allocation are more difficult to illustrate comparatively because it is unclear how adjustments for some of these allocations would affect other programming categories. Even so, Table 13 and Figure 6 below compare the McLaughlin/Blackburn augmented Bortz results with Horowitz results that include PTV-only Systems (reflecting actual survey responses) and the WGN-only and WGN/PTV-only adjustment previously described.

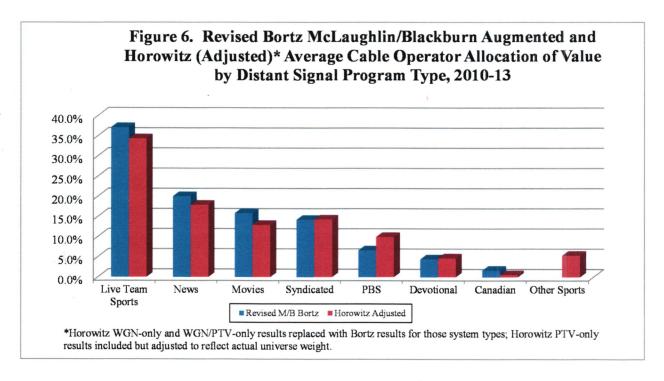
Table 13. Horowitz (Adjusted)* and Revised Bortz McLaughlin/Blackburn Augmented Survey Response Comparison, 2010-13

	20	2010		2011		2012		2013		Average: 2010-13	
Program Type	Horowitz	Bortz	Horowitz	Bortz	Horowitz	Bortz	Horowitz	Bortz	Horowitz	Bortz	
Live Team Sports	36.9%	39.1%	31.5%	34.9%	32.3%	37.5%	36.9%	37.0%	34.4%	37.1%	
News	18.9%	17.8%	15.1%	17.5%	19.6%	22.6%	18.2%	22.3%	17.9%	20.1%	
Syndicated	15.1%	15.3%	16.8%	16.7%	13.4%	13.4%	12.0%	11.6%	14.3%	14.2%	
Movies	14.8%	15.2%	14.8%	17.9%	11.6%	15.1%	10.6%	15.2%	12.9%	15.8%	
Devotional	4.3%	3.8%	4.7%	4.3%	5.5%	4.7%	4.3%	5.0%	4.7%	4.4%	
PTV	6.1%	7.2%	9.5%	6.9%	11.1%	5.5%	12.7%	6.9%	9.9%	6.6%	
Canadian	0.0%	1.6%	1.0%	1.9%	0.9%	1.2%	0.4%	2.1%	0.6%	1.7%	
Other Sports TOTAL	4.1% 100.0%	<u>NA</u> 100.0%	6.7% 100.0%	<u>NA</u> 100.0%	<u>5.6%</u> 100.0%	<u>NA</u> 100.0%	4.9% 100.0%	<u>NA</u> 100.0%	<u>5.3%</u> 100.0%	<u>NA</u> 100.0%	

Columns may not add to total due to rounding.

Source: Appendix Table A-2; and JSC_CDC Analysis Version of APKS_SUMMARYTABLE_2010-2013_5SEPT17.xlsx

^{*}Horowitz WGN-only and WGN/PTV-only responses replaced with Bortz results for those system types; Horowitz PTV-only systems included, but adjusted for actual universe weight



The remaining difference in the results is likely explained by the other, uncorrected factors discussed in this testimony. Further, it is important to note that the results of both surveys overstate the Program Suppliers and Devotional shares (at the expense of JSC, CTV and PTV) due to the WGNA compensability issue – which is not fully accounted for in either survey. Note also that the above calculations do not include any adjustment for the Exempt PTV Signal issue discussed above.

I declare under penalty of perjury that the foregoing is true and correct.

James M. Trautman

10/4/17

Date

APPENDIX A

Supporting Data Tables



Table A-2. Comparison of Original and Adjusted Bortz and Horowitz Survey Allocations by Year, 2010-13

		2010									
	•			Revised	Revised McLaughlin/						
	D . (T T 1.	McLaughlin/ Blackburn	McLaughlin/ Blackburn	Blackburn Augmented	**	Horowitz-				
Program Type	Bortz Survey	Horowitz Survey	Augmented Bortz	Augmented Bortz*	Bortz (Exc. 3.75)	Horowitz- Adjusted**	Adjusted (ex. PTV-only)***				
Live Team Sports	40.9%	31.9%	39.0%	39.1%	38.6%	36.8%	38.0%				
News	18.7%	12.4%	17.8%	17.8%	17.6%	18.8%	19.4%				
Syndicated	16.0%	20.3%	15.2%	15.3%	15.1%	15.3%	15.8%				
Movies	15.9%	17.2%	15.1%	15.2%	15.0%	14.9%	15.4%				
Devotional	4.0%	6.8%	3.8%	3.8%	3.8%	4.2%	4.4%				
PTV	4.4%	3.8%	7.5%	7.2%	8.3%	5.8%	2.9%				
Canadian	0.1%	0.0%	1.6%	1.6%	1.6%	0.0%	0.0%				
Other Sports	NA	6.8%	NA	NA	NA	4.1%	4.2%				
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%				

				2011	L		
					Revised		_
				Revised	McLaughlin/		
			McLaughlin/	McLaughlin/	Blackburn		
			Blackburn	Blackburn	Augmented		Horowitz-
	Bortz	Horowitz	Augmented	Augmented	Bortz (Exc.	Horowitz-	Adjusted (ex.
Program Type	Survey	Survey	Bortz	Bortz*	3.75)	Adjusted**	PTV-only)***
Live Team Sports	36.4%	27.1%	34.2%	34.9%	34.5%	31.4%	32.6%
News	18.3%	12.9%	17.2%	17.5%	17.3%	15.1%	15.6%
Syndicated	17.4%	17.6%	16.3%	16.7%	16.5%	16.8%	17.4%
Movies	18.6%	11.4%	17.5%	17.9%	17.6%	14.8%	15.4%
Devotional	4.5%	5.9%	4.2%	4.3%	4.2%	4.7%	4.9%
PTV	4.7%	13.3%	8.7%	6.9%	8.0%	9.4%	7.0%
Canadian	0.2%	1.0%	1.8%	1.9%	1.9%	1.0%	0.0%
Other Sports	<u>NA</u>	10.8%	<u>NA</u>	<u>NA</u>	<u>NA</u>	6.8%	7.0%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A-2 (Continued). Comparison of Original and Adjusted Bortz and Horowitz Survey Allocations by Year, 2010-13

2012 Revised Revised McLaughlin/ McLaughlin/ McLaughlin/ Blackburn Blackburn Blackburn Augmented Horowitz-**Bortz** Horowitz Augmented Augmented Bortz (Exc. Horowitz-Adjusted (ex. PTV-only)*** **Program Type** Survey **Bortz** Bortz* 3.75) Adjusted** Survey Live Team Sports 25.5% 37.0% 37.5% 37.1% 37.9% 32.2% 32.6% News 22.8% 15.7% 22.3% 22.6% 22.4% 19.5% 19.7% Syndicated 13.5% 16.0% 13.2% 13.4% 13.2% 13.2% 13.3% Movies 15.3% 12.1% 14.9% 15.1% 15.0% 11.4% 11.5% Devotional 4.8% 5.7% 4.6% 4.7% 4.7% 5.5% 5.6% PTV 6.9% 6.5% 10.7% 5.1% 15.1% 5.5% 11.7% Canadian 0.6% 0.9% 1.2% 1.2% 1.2% 0.9% 0.9% Other Sports NA 9.0% NA NA NA 5.7% 5.8% TOTAL 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%

				2013	3		
					Revised		_
				Revised	McLaughlin/		
			McLaughlin/	McLaughlin/	Blackburn		
			Blackburn	Blackburn	Augmented		Horowitz-
	Bortz	Horowitz	Augmented	Augmented	Bortz (Exc.	Horowitz-	Adjusted (ex.
Program Type	Survey	Survey	Bortz	Bortz*	3.75)	Adjusted**	PTV-only)***
Live Team Sports	37.7%	35.3%	36.1%	37.0%	36.6%	36.9%	38.8%
News	22.7%	9.5%	21.7%	22.3%	22.0%	18.2%	19.2%
Syndicated	11.8%	16.3%	11.3%	11.6%	11.4%	11.9%	12.5%
Movies	15.5%	12.4%	14.8%	15.2%	15.0%	10.6%	11.1%
Devotional	5.0%	3.5%	4.8%	5.0%	4.9%	4.3%	4.5%
PTV	6.2%	15.4%	9.1%	6.9%	8.0%	12.9%	8.4%
Canadian	1.2%	0.4%	2.0%	2.1%	2.1%	0.4%	0.4%
Other Sports	<u>NA</u>	7.4%	<u>NA</u>	<u>NA</u>	<u>NA</u>	4.9%	<u>5.1%</u>
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

^{*}Adjusts McLaughlin results to account for Horowitz survey allocations of less than 100% for PTV-only respondents.

Note: Columns may not add to total due to rounding.

^{**}Horowitz WGN-only and WGN/PTV-only responses replaced with Bortz results for those system types; Horowitz PTV-only systems included, but adjusted for actual universe weight.

^{***}Horowitz WGN-only and WGN/PTV-only responses replaced with Bortz results for those system types; Horowitz PTV-only systems excluded.

Table A-3. Number of Unique Respondents and Responding Systems to Bortz and Horowitz Surveys, 2010-13

					Total:
Completed Surveys	2010	2011	2012	2013	2010-13
Bortz Surveys:					
Responding Systems	163	161	170	160	654
Unique Respondents	68	81	74	72	295
Horowitz Surveys:					
Responding Systems	123	182	228	200	733
Unique Respondents	31	43	42	41	157

Sources: JSC_2010_2013_Masked_withDistantStations_MSOchanges_13July2017.xlsx; and JSC00008255.

Table A-4. Detailed Unique Respondent Summary

	Bortz	20	010	Horowitz			Bortz	20	011	Horowitz	
Respondent		Percent	Respondent		Percent	Respondent		Percent	Respndent	Number of	Percent
Number	Systems	of Total	Number	Systems	of Total	Number	Systems	of Total	Number	Systems	of Total
16	11	6.7%	35	28	22.8%	9	10	6.2%	43	27	14.8%
37	9	5.5%	32	12	9.8%	44	8	5.0%	49	19	10.4%
39	8	4.9%	40	12	9.8%	15	7	4.3%	10	13	7.1%
2	6	3.7%	37	8	6.5%	70	6	3.7%	35	10	5.5%
58	6	3.7%	39	7	5.7%	72	6	3.7%	16	8	4.4%
34	5	3.1%	7	6	4.9%	10	5	3.1%	26	8	4.4%
19	5	3.1%	24	5	4.1%	14	5	3.1%	41	7	3.8%
0	5	3.1%	31	5	4.1%	30	5	3.1%	32	6	3.3%
6	5	3.1%	11	3	2.4%	67	5	3.1%	39	6	3.3%
9 4	5 4	3.1% 2.5%	23 27	3	2.4% 2.4%	53 64	4	2.5% 2.5%	46 23	6	3.3%
	4	2.5%	4	3	2.4%	04 77	4	2.5%	5	5 5	2.7%
16 i7	4	2.5%	9	3	2.4%	81	4	2.5%	11	4	2.7% 2.2%
;	3	1.8%	12	2	1.6%	22	3	1.9%	25	4	2.2%
	3	1.8%	13	2	1.6%	24	3	1.9%	31	4	2.2%
1	3	1.8%	14	2	1.6%	33	3	1.9%	44	4	2.2%
3	3	1.8%	18	2	1.6%	57	3	1.9%	12	3	1.6%
6	3	1.8%	26	2	1.6%	59	3	1.9%	15	3	1.6%
4	3	1.8%	38	2	1.6%	76	3	1.9%	24	3	1.6%
7	3	1.8%	5	2	1.6%	7	2	1.2%	38	3	1.6%
2	3	1.8%	10	1	0.8%	18	2	1.2%	14	2	1.1%
58	3	1.8%	16	1	0.8%	20	2	1.2%	18	2	1.1%
2	2	1.2%	17	1	0.8%	27	2	1.2%	22	2	1.1%
9	2	1.2%	22	1	0.8%	41	2	1.2%	28	2	1.1%
0	2	1.2%	25	1	0.8%	43	2	1.2%	29	2	1.1%
5	2	1.2%	28	1	0.8%	45	2	1.2%	30	2	1.1%
0	2	1.2%	29	1	0.8%	75	2	1.2%	34	2	1.1%
8	2	1.2%	33	1	0.8%	1	1	0.6%	36	2	1.1%
3	2	1.2%	36	1	0.8%	2	1	0.6%	37	2	1.1%
3	2	1.2%	6	1	0.8%	3	1	0.6%	40	2	1.1%
0	2	1.2%	8	1	0.8%	4	1	0.6%	7	2	1.1%
1	2	1.2%				5	1	0.6%	1	1	0.5%
2	2	1.2%	TOTAL	123	100.0%	6	1	0.6%	13	1	0.5%
4	2	1.2%				8	1	0.6%	17	1	0.5%
	2	1.2%				11	1	0.6%	19	1	0.5%
	1 1	0.6% 0.6%				12 13	1 1	0.6% 0.6%	2 27	1 1	0.5%
						16			3	1	0.5%
	1 1	0.6% 0.6%				17	1 1	0.6% 0.6%	33	1	0.5% 0.5%
	1	0.6%				19	1	0.6%	4	1	0.5%
0	1	0.6%				21	1	0.6%	45	1	0.5%
3	1	0.6%				23	1	0.6%	6	1	0.5%
5	1	0.6%				25	1	0.6%	8	<u>i</u>	0.5%
7	1	0.6%				26	1	0.6%		-	910.10
8	1	0.6%				28	1	0.6%	TOTAL	182	100.0%
1	1	0.6%				29	1	0.6%			
2	1	0.6%				31	1	0.6%			
4	1	0.6%				32	1	0.6%			
7	1	0.6%				34	1	0.6%			
8	1	0.6%				35	1	0.6%			
9	1	0.6%				36	1	0.6%			
1	1	0.6%				37	1	0.6%			
2	1	0.6%				38	1	0.6%			
3	1	0.6%				39	1	0.6%			
5	1	0.6%				40	1	0.6%			
0	1	0.6%				42	1	0.6%			
1	1	0.6%				46	1	0.6%			
2	1	0.6%				47	1	0.6%			
5	1	0.6%				48	1	0.6%			
6	1	0.6%				49	1	0.6%			
8	1	0.6%				50 51	1	0.6% 0.6%			
-	1						1				
4 5	1	0.6% 0.6%				52 54	1	0.6% 0.6%			
7	1	0.6%				55	1	0.6%			
3	1	0.6%				56	1	0.6%			
5	1	0.6%				58	1	0.6%			
6	1	0.6%				60	1	0.6%			
-	_	3.070				61	1	0.6%			
OTAL	163	100.0%				62	1	0.6%			
						63	1	0.6%			
						65	1	0.6%			
						66	1	0.6%			
						68	1	0.6%			
						69	1	0.6%			
						71	1	0.6%			
						73	1	0.6%			
						74	1	0.6%			
						78	1	0.6%			
						79	1	0.6%			
						80	1	0.6%			
						TOTAL	161	100.0%			
						TOTAL	101	100.070			

Sources: Bortz Respondent Data Provided to CDC (CRB 2010 Combined; CRB 2011 Combined; CRB 2012 Combined; and 2013 Combined); and JSC_2010_2013_Masked_withDistantStations_MSOchanges_13July2017.xksx.

Table A-4 (Continued). Detailed Unique Respondent Summary

	n ·	20	012	TT									
Dognandant	Bortz	Percent	Respondent	Horowitz Number of	Percent	Respondent	Bortz	Percent	Deanndont	Horowitz Number of	Percent		
Respondent	Systems	of Total	Number		of Total			of Total	Respudent				
Number 20	9	5.3%	47	Systems 36	15.8%	Number 48	Systems 7	4.4%	Number 54	Systems 38	of Tota 19.0%		
19	7	4.1%	25	25	11.0%	70	7	4.4%	44	20	10.0%		
27	7	4.1%	32	13	5.7%	10	6	3.8%	37	17	8.5%		
4	6	3.5%	36	13	5.7%	16	6	3.8%	68	15	7.5%		
9	6	3.5%	37	12	5.3%	22	5	3.1%	43	12	6.0%		
33	6	3.5%	39	12	5.3%	13	4	2.5%	69	12	6.0%		
18	5	2.9%	54	12	5.3%	20	4	2.5%	48	10	5.0%		
60	5	2.9%	53	11	4.8%	21	4	2.5%	32	8	4.0%		
65	5	2.9%	35	7	3.1%	25	4	2.5%	49	8	4.0%		
67	5	2.9%	28	6	2.6%	39	4	2.5%	20	4	2.0%		
30	4	2.4%	42	6	2.6%	55	4	2.5%	36	4	2.0%		
49	4	2.4%	44	6	2.6%	61	4	2.5%	46	4	2.0%		
51	4	2.4%	26	5	2.2%	66	4	2.5%	17	3	1.5%		
59	4	2.4%	33	5	2.2%	23	4	2.5%	28	3	1.5%		
61	4	2.4%	51	5	2.2%	6	3	1.9%	3	3	1.5%		
63	4	2.4%	15	4	1.8%	9	3	1.9%	5	3	1.5%		
71	4	2.4%	16	4	1.8%	24	3	1.9%	52	3	1.5%		
11	3	1.8%	2	4	1.8%	26	3	1.9%	62	3	1.5%		
16	3	1.8%	27	4	1.8%	33	3	1.9%	2	2	1.0%		
17	3	1.8%	31	4	1.8%	36	3	1.9%	21	2	1.0%		
23									22				
23 26	3	1.8% 1.8%	18 3	3	1.3% 1.3%	65 68	3	1.9% 1.9%	27	2 2	1.0% 1.0%		
				3						2			
31 41	3	1.8%	49	2	1.3%	8 5	3 2	1.9%	41	2	1.0%		
		1.8%	1		0.9%			1.3%	53		1.0%		
12 14	2 2	1.2% 1.2%	11	2 2	0.9%	7	2 2	1.3% 1.3%	64	2	1.0%		
			12		0.9%	17			1		0.5%		
40	2	1.2%	30	2	0.9%	19	2	1.3%	11	1	0.5%		
43	2	1.2%	38	2	0.9%	29	2	1.3%	12	1	0.5%		
45	2	1.2%	45	2	0.9%	34	2	1.3%	15	1	0.5%		
46	2	1.2%	10	1	0.4%	40	2	1.3%	23	1	0.5%		
50	2	1.2%	14	1	0.4%	41	2	1.3%	25	1	0.5%		
56	2	1.2%	22	1	0.4%	43	2	1.3%	26	1	0.5%		
62	2	1.2%	24	1	0.4%	44	2	1.3%	31	1	0.5%		
72	2	1.2%	29	1	0.4%	47	2	1.3%	34	1	0.5%		
1	1	0.6%	34	1	0.4%	53	2	1.3%	39	1	0.5%		
2	1	0.6%	40	1	0.4%	54	2	1.3%	40	1	0.5%		
3	1	0.6%	46	1	0.4%	59	2	1.3%	51	1	0.5%		
5	1	0.6%	5	1	0.4%	71	2	1.3%	57	1	0.5%		
6	1	0.6%	50	1	0.4%	72	2	1.3%	59	1	0.5%		
7	1	0.6%	55	1	0.4%	52	2	1.3%	7	1	0.5%		
8	1	0.6%	7	1	0.4%	1	1	0.6%	71	1	0.5%		
10	1	0.6%	8	<u>1</u>	0.4%	2	1	0.6%					
13	1	0.6%				3	1	0.6%	TOTAL	200	100.0%		
15	1	0.6%	TOTAL	228	100.0%	4	1	0.6%					
21	1	0.6%				11	1	0.6%					
22	1	0.6%				12	1	0.6%					
24	1	0.6%				14	1	0.6%					
25	1	0.6%				15	1	0.6%					
74	1	0.6%				18	1	0.6%					
28	1	0.6%				27	1	0.6%					
29	1	0.6%				28	1	0.6%					
32	1	0.6%				30	1	0.6%					
34	1	0.6%				31	1	0.6%					
35	1	0.6%				32	1	0.6%					
36	1	0.6%				35	1	0.6%					
37	1	0.6%				37	1	0.6%					
38	1	0.6%				38	1	0.6%					
39	1	0.6%				42	1	0.6%					
42	1	0.6%				45	1	0.6%					
44	1	0.6%				46	1	0.6%					
47	1	0.6%				49	1	0.6%					
18	1	0.6%				50	1	0.6%					
52	1	0.6%				51	1	0.6%					
53	1	0.6%				56	1	0.6%					
54	1	0.6%				57	1	0.6%					
55	1	0.6%				58	1	0.6%					
57	1	0.6%				60	1	0.6%					
58	1	0.6%				62	1	0.6%					
54	1	0.6%				63	1	0.6%					
56	1	0.6%				64	1	0.6%					
58	1	0.6%				67	1	0.6%					
69	1	0.6%				69	1	0.6%					
70	1	0.6%				0,	_	0.070					
73	<u>1</u>	0.6%				TOTAL	160	100.0%					
-	<u> </u>	0.070					100	100.070					
TOTAL	170	100.0%											

Sources: Bortz Respondent Data Provided to CDC (CRB 2010 Combined; CRB 2011 Combined; CRB 2012 Combined; and 2013 Combined); and JSC_2010_2013_Masked_withDistantStations_MSOchanges_13July2017.xlsx.

Table A-5. Bortz Survey Representation of Cable Systems with PTV Distant Signal

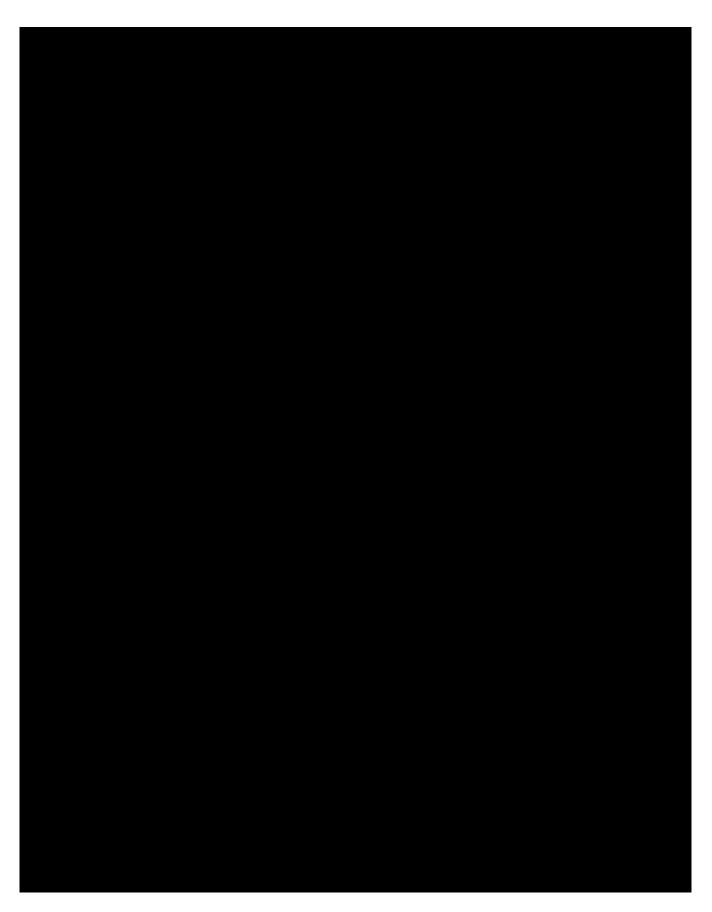
	Bortz Survey Universe Projection*		Actual Form 3 Universe**	
	Total Royalties for	Percent of	Total Royalties for	Percent of
	Cable Systems with	Royalties for All	Cable Systems with	Royalties for All
	1+ PTV and 1+ U.S.	Systems with 1+	1+ PTV and 1+ U.S.	Systems with 1+
	Commercial Distant	U.S. Commercial	Commercial Distant	U.S. Commercial
	Signals	Distant Signals	Signals	Distant Signals
2010	\$40,832,984	48.7%	\$39,829,778	47.5%
2011	\$55,287,762	61.4%	\$50,998,530	56.6%
2012	\$60,806,312	63.1%	\$63,347,906	65.7%
2013	\$62,326,917	62.7%	\$67,059,062	67.5%
2010-13	\$219,253,975	59.3%	\$221,235,276	59.8%

^{*}Projections are based on the distribution of PTV-carrying systems in the Bortz respondent pool.

^{**}Based on CDC 12-16 data.

APPENDIX B.

WGNA Compensable Programs and Categorization in Dr. Gray's Database



Rebuttal Testimony of James M. Trautman - B-2



Rebuttal Testimony of James M. Trautman - B-3



APPENDIX C.

Samples of CDC Distant Signal Lists Relied Upon by Horowitz Interviewers



Source: MPAA_F3_Study_Details_20131_AllF3wDist_29April2014.xls.



 $Source: MPAA_F3_Study_Details_20121-Allform3sys_wDist_9May2013.xls.$



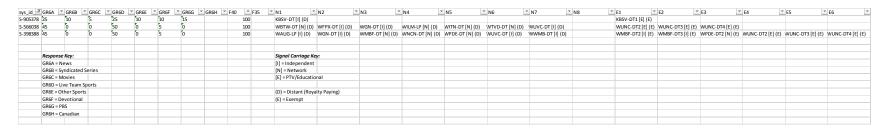
Source: MPAA_2011_1_F3StudyDetails_FINAL_16Apr2012.xlsx.



Source: MP_2010-1_ALLF3sys_DistantCarriage_17May11.xlsx.

APPENDIX D.

Sample of Masked CDC Data Identifying Horowitz Respondents With Exempt PTV Signals



Source:

APKS_MASKEDSAMPLE_distant_carriage_with_boc_and_ds_and_current_ds_and_stratum_boc_ExemptSep_2010_2013.xlsx.

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

In the Matter of)	Docket No. 2007-3 CRB CD 2004-2005
Distribution of the)	
2004 and 2005)	
Cable Royalty Funds)	
)	

REBUTTAL TESTIMONY OF JAMES TRAUTMAN

December 11, 2009

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REBUTTAL TESTIMONY OF JAMES TRAUTMAN

 I am submitting this testimony on behalf of the Joint Sports Claimants (JSC) in response to testimony provided on behalf of the Program Suppliers (PS) by Dr. George Ford, Howard Homonoff and John Mansell.

I. Qualifications

- 2. I have previously submitted written testimony in these proceedings, including my curriculum vitae. I am Managing Director of Bortz Media & Sports Group, Inc. In this capacity, I provide business planning, market research, and related analytical services to both cable programming networks and cable system operators. I have been retained to evaluate and/or assist more than 50 programming networks, and have been retained on multiple occasions by all of the three largest cable MSOs as well as the leading cable industry associations. I was qualified as "an expert in market research, including survey research and valuation in the cable, broadcast and television programming industry."
- 3. In addition, I have advised both networks and owners of programming with respect to the negotiation of agreements with distributors, and have directly participated in such negotiations. Based on this experience, I have substantial knowledge of the factors that programming networks consider in valuing the programming that they acquire and in negotiating

¹ Tr. 53-54.

license fee agreements with cable operators. Similarly, I am aware of the factors that cable operators consider when choosing which networks to carry.

II. Ford Analysis

- 4. Dr. Ford sought to estimate the relative marketplace values of distant signal programming categories by "assign[ing] a dollar value to viewership using price data from the advertising market." In brief, Dr. Ford estimated these shares by multiplying (a) the share of distant signal viewing minutes attributable to each of the distant signal programming categories, as estimated in a Program Supplier study that relies upon data from the A.C. Nielsen Company (see Testimony of Paul Lindstrom) and (b) the relative advertising prices (i.e., cost per thousand or CPM figures) from data reflective of local broadcast advertising, which he also estimates based on various assumptions.³
- 5. Dr. Ford focuses his analysis on estimating local broadcast market advertising sales as a proxy for broadcast market program purchase prices. I have applied Dr. Ford's analysis, as a test of its validity, to the cable network markets. I limit the analysis to a comparison of cable network programming that most resembles the programming covered by just two categories in this proceeding Joint Sports and Program Suppliers. I first determine the relative amounts that cable networks would *supposedly* have paid to telecast JSC and Program Supplier programming in 2004-05 -- and then compared those amounts to the amounts that the

² Ford Written Direct Testimony (PS. Ex. 11) at 8.

³ Ford Written Direct Testimony (PS Ex. 11) at 39.

cable networks *actually* paid to telecast that programming (using largely the same sources of information upon which the witnesses for Program Suppliers have relied). I conclude that Dr. Ford's methodology yields estimated relative values that are inconsistent with the actual relative market values of JSC programming and Program Suppliers' programming on cable networks in 2004 and 2005. As discussed below, Dr. Ford's methodology would significantly have understated the actual relative marketplace value of JSC programming on cable networks in 2004-05, and significantly overstated the actual relative marketplace value of Program Suppliers programming on cable networks in those years.

a. TBS

- 6. Of all the cable networks, TBS may provide the best example of what would happen in the hypothetical marketplace that Dr. Ford attempted to replicate. TBS was the most widely carried distant signal until 1998, when it converted to a cable network and was no longer subject to compulsory licensing. As a result of the TBS conversion, cable operators were required to negotiate in the marketplace directly with TBS in order to carry the copyrighted programming on TBS that previously had been carried pursuant to compulsory licensing. TBS also was required to negotiate in the marketplace with copyright owners in order to provide that programming to cable operators pursuant to negotiated deals rather than compulsory licensing.
- 7. TBS televised 78 games of the Atlanta Braves in 2004 and 72 games in 2005 pursuant to an agreement that it had negotiated with Major League Baseball. According to Howard Homonoff, another Program Suppliers' witness, virtually all of the other programming

on TBS in 2004 and 2005 consisted of programming that would be classified as programming comparable to that within the Program Suppliers' claim.⁴

8. The viewing-based formula developed by Dr. Ford suggests that TBS should have spent approximately 4.25% of its 2004 programming budget (and 3.51% of its 2005 programming budget) for the rights to televise the Atlanta Braves. *See* Appendix A, Table A-2. In fact, however, TBS spent at least 24.08% of its 2004 programming budget (and 24.65% of its 2005 programming budget) for the rights to televise the Atlanta Braves. *See* Appendix A, Table A-1. The relative dollar amounts that TBS spent on the Braves programming (versus the programming comparable to that within the Program Suppliers' claim) were substantially in excess of the relative amounts of time that such programming was broadcast by TBS, *i.e.*, 2.67% in 2004 and 2.47% in 2005. *See* Appendix A, Table A-2. The relative dollar amounts that TBS spent on the Braves programming (versus the programming comparable to that within the Program Suppliers' claim) also were substantially in excess of the relative amounts of time that cable and DBS subscribers spent viewing these different programming categories, *i.e.*, 2.6% in 2004 and 2.42% in 2005. *See* Appendix A, Table A-2. This comparative analysis is summarized in Table 1 and Figure 1 below.

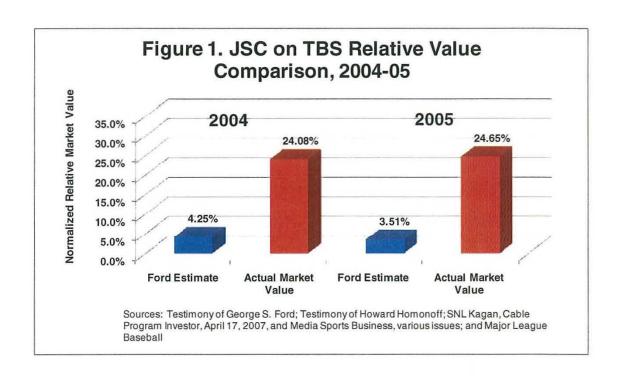
⁴ Homonoff Written Direct Testimony (PS Ex. 7) at HBH-5 & HBH-6.

Table 1. MLB on TBS Valuation Comparison

			Estimated Share of	
	Share of	Share of	Market Value:	Actual Share of
	Time (%)	Viewing(%)	Ford Analysis (%)	Market Value (%)
2004				
JSC(Braves)*	2.67%	2.60%	4.25%	24.08%
Program Suppliers/Other	97.33%	97.40%	95.75%	75.92%
Total	100.00%	100.00%	100.00%	100.00%
2005				
JSC(Braves)*	2.47%	2.42%	3.51%	24.65%
Program Suppliers/Other	97.53%	97.58%	96.49%	75.35%
Total	100.00%	100.00%	100.00%	100.00%

^{*}Actual prices for ¿Coprogramming exclude production costs and therefore should be viewed as conservative.

Sources: Testimony of George S. Ford; Testimony of Howard Homonoff; SNL Kagan, *Cable Program Investor*, April 17, 2007; SNL Kagan, *Media Sports Business*, various issues; and Major League Baseball.



9. It should be noted that the actual amounts that TBS spent to acquire all its programming in 2004 and 2005 are not publicly available. For these amounts, I have relied upon data published by SNL Kagan, which is the same source upon which Howard Homonoff and John Mansell relied in their testimony on behalf of the Program Suppliers. I could not find any estimate by SNL Kagan of the amount that TBS paid to MLB for the 2004 and 2005 rights to televise the Braves' games. For that amount I relied upon the actual contract between MLB and TBS.

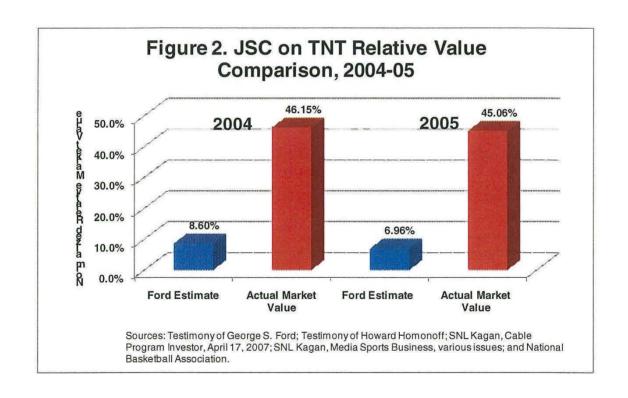
b. TNT

10. The cable network TNT also provides a good example of the potential outcome of marketplace negotiations for distant signal programming in that it offers a combination of JSC and Program Suppliers' programming for which actual market prices can be directly compared. In 2004 and 2005, TNT exhibited NBA games that accounted for between two and three percent of the cable network's total programming hours and roughly five percent of the network's total viewing time. See Appendix B, Table B-2. Dr. Ford's methodology suggests that TNT would have allocated 8.6% of its 2004 programming budget (and 7.0% of its 2005 programming budget) for the rights to this NBA programming. However, TNT actually committed nearly one-half of its total programming budget to the NBA in these two years. See Appendix B, Table B-1. This comparison is reflected in Table 2 and Figure 2 below:

Table 2. NBA on TNT Valuation Comparison

	Share of Time (%)	Share of Viewing (%)	Estimated Share of Market Value: Ford Analysis (%)	Actual Share of Market Value (%)
2004				
JSC(NBA)*	2.74%	5.37%	8.60%	46.15%
Program Suppliers/Other	97.26%	94.63%	91.40%	53.85%
Total	100.00%	100.00%	100.00%	100.00%
2005				
JSC(NBA)*	2.80%	4.86%	6.96%	45.06%
Program Suppliers	97.20%	95.14%	93.04%	54.94%
Total	100.00%	100.00%	100.00%	100.00%

^{*}Actual prices for SC programming exclude production costs and therefore should be viewed as conservative. Sources: Testimony of George S. Ford; Testimony of Howard Homonoff; SNL Kagan, Cable Program Investor, April 17, 2007; SNL Kagan, Media Sports Business, various issues; and National Basketball Association.



c. Top 25 Cable Networks

- 11. I also have applied Dr. Ford's methodology to the top 25 cable networks that Program Suppliers' witness Howard Homonoff analyzed.⁵
- programming hours on his top 25 cable networks in 2004 and 0.6% of the total programming hours in 2005. See Appendix C, Table C-2. Relying upon SNL Kagan data, I have determined that that MLB, NBA, NFL and NHL programming accounted for 1.7% of the 2004 (and 1.4% of the 2005) total time that cable and satellite households spent viewing the programming on the Top 25 cable networks. See Appendix C, Table C-2. Also relying upon SNL Kagan data (and information for TBS supplied by Major League Baseball), I have determined that the top 25 cable networks spent approximately 20% of their 2004 programming budget (and 17% of their 2005 programming budget) in order to obtain the rights to MLB, NBA, NFL and NHL programming. In contrast, the Ford formula suggests that the comparable amounts would be 2.8% and 2.1%. See Appendix C, Table C-1. This comparative analysis is set forth in Table 3 and Figure 3.6

⁵ Homonoff Written Direct Testimony (PS Ex. 7) at 18-21, HBH-5 and HBH-6.

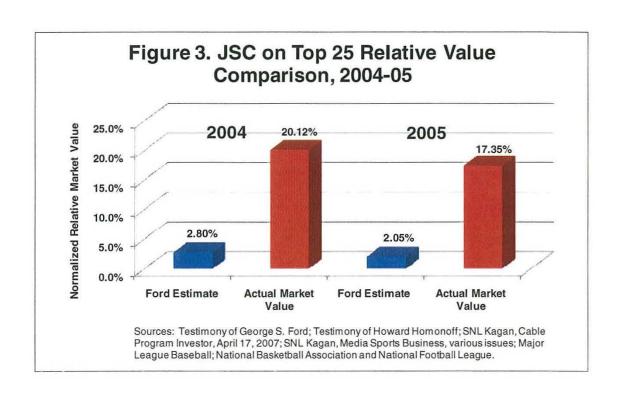
⁶ Mr. Homonoff's "Top 25" networks do not include regional sports networks (RSNs) that collectively reach a very high percentage of cable subscribers and would certainly be considered among the "Top 25" cable networks carried by any individual cable system. SNL Kagan reported that Fox Sports Net, which represents a collection of several RSNs owned by the same company, had programming expenditures of nearly \$2.4 billion in 2004-05, second only to ESPN and over \$1 billion more than any other cable network (SNL Kagan, *Cable Program Investor*, April 17, 2007). Most of these expenditures were used to acquire and/or produce JSC programming. Therefore, by excluding RSNs, the ratios presented in Table 3 and Figure 3 understate the true value of JSC programming in the cable network marketplace. See Appendix D, Table D-1 for details on the reach and license fees associated with RSNs.

Table 3. JSC on Top 25 Valuation Comparison

	Share of Time (%)	Share of Viewing(%)	Estimated Share of Market Value: Ford Analysis (%)	Actual Share of Market Value (%)
2004				
JSC(MLB, NBA, NFL, NHL)*	0.72%	1.71%	2.80%	20.12%
Program Suppliers/Other	99.28%	98.29%	97.20%	79.88%
Total	100.00%	100.00%	100.00%	100.00%
2005				
JSC (MLB, NBA, NFL, NHL)*	0.55%	1.41%	2.05%	17.35%
Program Suppliers/Other	99.45%	98.59%	97.95%	82.65%
Total	100.00%	100.00%	100.00%	100.00%

^{*}Actual prices for JSC programming exclude production costs and therefore should be viewed as conservative.

Sources: Testimony of George S. Ford; Testimony of Howard Homonoff; SNL Kagan, *Cable Program Investor*, April 17, 2007; SNL Kagan, *Media Sports Business*, various issues; Major League Baseball, National Basketball Association and National Football League.



III. Homonoff Analysis

13. Howard Homonoff concluded that "the relative program value seen in the cable network marketplace is a very helpful guidepost for a hypothetical relative program value in the broadcast distant signal marketplace." I agree that cable network data can provide useful information about the cable distant signal marketplace, but the cable operator surveys I presented earlier in this proceeding are the most relevant and direct measure of relative value of distant signal programs. Moreover, an examination of the cable network marketplace does not support Mr. Homonoff's suggestion that the Program Suppliers' programming on distant signals in 2004 and 2005 was substantially more valuable than the JSC programming on distant signals during those years.

a. Time-Based Analysis

14. Mr. Homonoff attempted to show that relative value in the distant signal marketplace by comparing the amount of time that Program Suppliers' programming occupied on the top 25 most widely carried cable networks in 2004-05 (approximately 89-90%) with the amount of time occupied by other programming on those networks in 2004-05, including "Sports" programming. However, the data presented in Tables 1 through 3 above demonstrate that the relative amount of time occupied by programming does not equate to the relative marketplace value of that programming.

⁷ Homonoff Written Direct Testimony (P.S. Ex. 7) at 14.

⁸ Homonoff Written Direct Testimony (P.S. Ex. 7) at 18-21, HBH-5 and HBH-6.

Mr. Homonoff spent: (1) approximately \$400,000 per hour for each hour of the JSC programming that they televised in 2004 and 2005; and (2) \$32,000 per hour for each hour of the Program Suppliers' programming that they televised in 2004 and 2005. In other words, each hour of that JSC programming on the top 25 cable networks cost approximately twelve times more on average than each hour of Program Suppliers' programming on those networks.

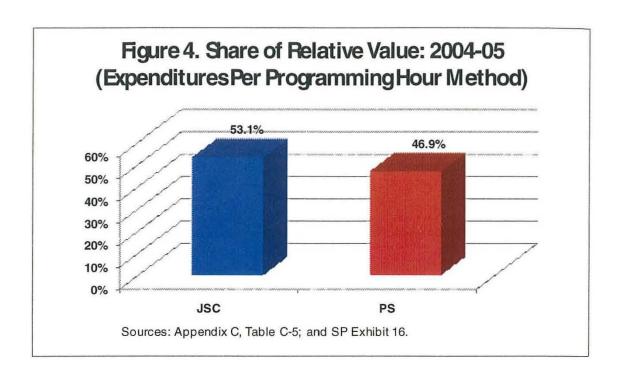
Applying these same per-hour valuations to the relative amounts of JSC and Program Suppliers' programming on distant signals during 2004-05 leads to the conclusion that these two categories had approximately the same value -- notwithstanding that Program Suppliers programming occupied substantially more telecast time than did JSC programming. This comparative analysis is reflected in Table 4 and Figure 4 below.

Table 4. Comparison of Distant Signal Relative Market Value: 2004-05 (Expenditures Per Programming Hour Method)

	2004-05		
	JBC	PS	
1. Percent of Distant Sgnal Programming Hours	4.6%	50.1%	
2. Cable Network Expenditures Per Programming Hour	\$396,703	\$32,153	
3. Time-Adjusted Expenditures (1*2)	\$18,248	\$16,109	
4. Share of Relative Value	53.1%	46.9%	

Sources: Appendix C, Table C-5; and SP Exhibit 16.

⁹ See Appendix C, Table C-5. I believe that the value per hour for JSC programming is understated in that production costs were not accounted for, and rights fees for NCAA and MLS programming were not publicly available. In addition, the PS value per hour is overstated in that total non-JSC expenditures were "credited" to PS for purposes of this analysis.



b. Viewing-Based Analysis

spent nearly \$2.9 billion in 2004 and 2005 to acquire the rights to televise JSC (MLB, NBA, NFL and NHL) programming; those license fees amounted to \$0.77 for each hour (or \$0.013 per each minute) that households spent viewing the JSC programming on the top 25 cable networks. In contrast, the top 25 cable networks spent approximately \$12.6 billion in 2004 and 2005 to acquire the rights to televise Program Suppliers' programming; those license fees amounted to approximately \$0.056 for each hour (or \$0.001 per each minute) that households spent viewing the Program Suppliers programming on the top 25 cable networks. In other words, each

 $^{^{10}}$ As noted in Footnote 7, the Program Suppliers total is overstated (and the JSC total understated) in this analysis.

viewing minute of JSC programming on Mr. Homonoff's top 25 cable networks cost on average 13 times more than each viewing minute of Program Suppliers' programming on those networks in 2004 and 2005.

17. Applying these same per-viewing minute valuations to the viewing minutes attributed to JSC and Program Suppliers' programming on distant signals in 2004 and 2005 leads to the conclusion that the JSC programming on distant signals in 2004-05 had approximately the same value as the Program Suppliers programming on distant signals during those years -- notwithstanding that cable subscribers spent substantially more time viewing Program Suppliers programming than JSC programming on distant signals (according to the viewing study presented by Program Suppliers' witness Paul Lindstrom¹¹). This comparative analysis is reflected in Table 5 and Figure 5 below.

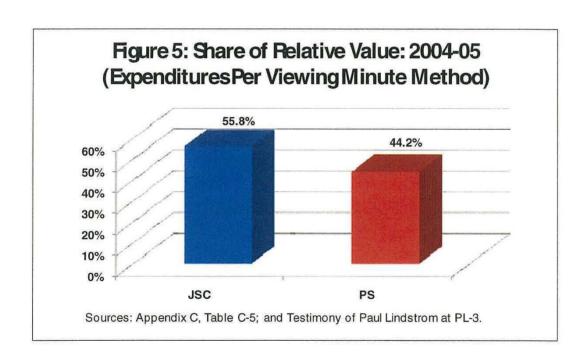
¹¹ Program Suppliers witnesses have acknowledged that the viewing percentages presented by Mr. Lindstrom cannot be used a measure of relative value of distant signal programming. (Ford Written Direct Testimony (PS Ex. 11) at 7-8). Nonetheless, I use the Lindstrom numbers here in order to demonstrate how the Program Suppliers witnesses' analytical approach and data together produce counterintuitive results.

Table 5. Comparison of Distant Signal Relative Market Value: 2004-05 (Expenditures Per Viewing Minute Method)

	2004-05		
	JSC	PS	
Number of Distant Sgnal Viewing Minutes	838,907	8,633,838	
2. Cable Network Expenditures Per Viewing Minute	\$0.013	\$0.001	
3. Projected Distant Sgnal Market Value (1*2)	\$10,906	\$8,634	
4. Share of Pelative Value	55.8%	44.2%	

^{*}Note that the number of viewing minutes reflected in the Testimony of Mr. Lindstrom is attributable to only a small sample of households in each year. As such, the number of viewing minutes (and resulting estimated programming values) would be far larger if applied to viewing minutes across all households. For example, the number of PS viewing minutes on the Top 25 cable networks in 2005 was approximately 7 trillion, compared with less than 6 million in Mr. Lindstrom's Nielsen sample.

Sources: Appendix C, Table C-5; and Testimony of Paul Lindstrom at PL-3.



IV. Mansell Analysis

a. Other Sports Programming

- 18. Mr. Mansell noted that there are sports in addition to those represented by the JSC members. 12 Mr. Mansell, however did not show whether or to what extent any of these other sports (with the exception of NASCAR, discussed below) appeared on any distant signals during the years 2004-05. Mr. Homonoff testified concerning the non-JSC sports on cable networks but did not provide any information concerning non-JSC sports on distant signals. 13 Two points should be noted in response.
- 27. First, WGN was the most widely carried distant signal in 2004-05. ¹⁴ In 2004-05 WGN televised more than 100 games of the Chicago Cubs, White Sox and Bulls -- more JSC sports than any other distant signal. ¹⁵

¹² Mansell Written Direct Testimony (PS Ex. 6) at 3.

¹³ Homonoff Written Direct Testimony (PS Ex. 7) at 16.

¹⁴ In 2004-05, nearly half of the Form 3 cable systems that carried a distant commercial signal carried WGN as their only distant signal, while approximately 70% of all Form 3 cable systems carried WGN as one of their distant signals. Source: Cable Data Corporation.

¹⁵ 2004 and 2005 were especially compelling years for the sports teams shown on WGN. During that time, the Cubs, White Sox and Bulls all were in their league playoffs or in contention for the playoffs and the White Sox won the World Series in 2005.

- 28. Second, according to CDC, at least 90 percent of the Form 3 cable systems that carried a distant commercial signal in 2004 and 2005, carried as a distant signal one or more stations that broadcast MLB, NBA, NFL, or NHL events.
- 29. As to Mr. Mansell's testimony concerning NASCAR programming, ¹⁶ three points should be noted.
- 30. First, in 2004 and 2005 more than three-quarters of NASCAR events were distributed on broadcast and cable networks that were not subject to the Section 111 compulsory license. The remaining NASCAR events in those years (a total of 18 in both 2004 and 2005) were distributed by FOX broadcast signals which were carried pursuant to the Section 111 cable compulsory license.
- 31. Second, based upon data provided by CDC, in 2004 and 2005, FOX broadcast signals were carried as distant signals by approximately 15-16 percent of the Form 3 cable systems that carried distant signals.
- 32. *Third*, in 2004-05 FOX broadcast the following JSC events in addition to NASCAR:

¹⁶ Mansell Written Direct Testimony (PS Ex. 6) at 33-34.

¹⁷ Mansell Written Direct Testimony (PS Ex. 6) at 34.

Table 6. JSC Events Carried by FOX; 2004-05

NFL:

Preseason

Regular Season NFC Package (Sunday afternoon games)

NFC Wild Card Playoffs

NFC Divisional Playoffs

NFC Championship

Super Bowl (2005)

MLB:

Regular Season Saturday Game of the Week

MLB All Star Game

National League Division Series (2004)

American League Division Series (2004)

National League Championship Series

American League Championship Series

World Series

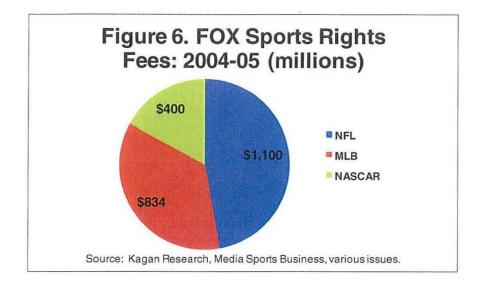
SBC Cotton Bowl

33. Finally, as shown in Table 7 and Figure 6, FOX spent nearly \$2 billion for its 2004-05 MLB and NFL telecast rights, or \$1.56 billion more than it spent for its NASCAR telecast rights in those years.

Table 7. FOX Sports Rights Fees: 2004-05 (Millions)

	2004	2005
NFL	\$550	\$550
MLB	417	417
NASCAR	<u>200</u>	<u>200</u>
Total	\$1,167	\$1,167

Source: Kagan Research, Media Sports Business, various issues.



b. Regional Sports Networks

- 34. I agree with Mr. Mansell that there were more telecasts of JSC events on regional sports networks ("RSNs") in 2004-05 than in 1998-99 and 1990-92 and that RSNs substantially increased their reach during this period. However, I believe that the growth in popularity of RSNs helps corroborate the high relative value of distant signal JSC programming compared to the Program Suppliers' programming on distant signals, as reflected in the above analyses.
- 35. First, as Table D-1 in Appendix D shows, the average license fee charged for RSNs is very high in comparison with other cable networks (i.e., typically second only to ESPN). The ability of RSNs to command these high fees is based principally on the strong regional appeal of the JSC sports shown on these networks.

36. Second, Table D-1 in Appendix D also summarizes the geographic areas served by regional sports networks (RSNs). The distant signal carriage of the U.S. stations that feature JSC sports (other than WGN) occurs primarily in the same states reflected in these RSN coverage areas. See Table D-2. Since the RSN coverage areas are defined based on territorial considerations for individual sports franchises and the perceived regional appeal of those franchises, it is therefore reasonable to conclude that the JSC sports on distant signals hold a similarly strong regional appeal.

APPENDIX A

Table A-1. Actual MLB on TBS Share of Market Value

	Actual Market Price (Mil.)*	Actual Market Value %
2004 JSC (Braves) (1) Program Suppliers/ Other (2) Total (3)	\$85.5 \$269.6 \$355.1	24.08% 75.92% 100.00%
2005 JSC (Braves) (1) Program Suppliers/ Other (2) Total (3)	\$89.7 <u>\$274.2</u> \$363.9	24.65% <u>75.35%</u> 100.00%

^{*}Actual prices for JCC programming exclude production costs and therefore should be viewed as conservative.

⁽¹⁾ Major League Baseball.

⁽²⁾ Total Expenditures less JSC Expenditures. Note that a small percentage of these expenditures could potentially be attributable to other categories of programming.

⁽³⁾ SNL Kagan, Cable Program Investor, April 17, 2007.

Table A-2. Estimated MLBon TBS Share of Market Value (Ford Estimation Methodology)

	Telecast Hours (1)	Share of Time (2)	HHVH (000s) (3)	Share of Viewing (4)	Relative CPM (5)	Pelative Market Value % (6)	Normal- ization Factor (7)	Normalized Pelative Market Value % (8)
2004 JSC (Braves) Program Suppliers/ Other* Total	234 <u>8,526</u> 8,760	2.67% <u>97.33%</u> 100.00%	174,096 6,509,784 6,683,880	2.60% 97.40% 100.00%	2.39 1.44	6.23% <u>140.25%</u> 146.47%	1.46 1.46	4.25 % <u>95.75%</u> 100.00%
2005 JSC (Braves) Program Supplier/Other* Total	216 <u>8,544</u> 8,760	2.47% <u>97.53%</u> 100.00%	167,184 <u>6,731,316</u> 6,898,500	2.42% <u>97.58%</u> 100.00%	2.05 1.40	4.97% 136.61% 141.58%	1.42 1.42	3.51% 96.49% 100.00%

 $^{{}^\}star \text{Based on Homonoff's testimony, non-} \\ \mathfrak{S} \text{Cprogramming on TBS} \text{ is almost exclusively attributable to Program Suppliers.}$

⁽¹⁾ Major League Baseball (number of telecasts at 3 hours per telecast); SNL Kagan, Economics of Basic Cable Networks, 13th Edition.

⁽²⁾ Percentage distribution of Telecast Hours.

⁽³⁾ See Table C-4. Household Viewing Hours, calculated as Telecast Hours x Avg. HH Delivered (000s).

⁽⁴⁾ Percentage distribution of HHVH.

⁽⁵⁾ Ford Testimony at 39.

⁽⁶⁾ Share of Viewing x Pelative CPM.

⁽⁷⁾ Factor required to reduce total relative market value percentage to 100%.

⁽⁸⁾ Relative Market Value % Normalization Factor.

APPENDIX B

Table B-1. Actual NBA on TNT Share of Market Value

	Actual Market Price (Mil.)*	Actual Market Value %
2004 JSC (NBA) (1) Program Suppliers/ Other (2) Total (3)	\$298.7 <u>\$348.5</u> \$647.2	46.15% <u>53.85%</u> 100.00%
2005 JSC (NBA) (1) Program Suppliers (2) Total (3)	\$307.7 \$375.1 \$682.8	45.06% <u>54.94%</u> 100.00%

^{*}Actual prices for &Cprogramming exclude production costs and therefore should be viewed as conservative.

⁽¹⁾ Kagan World Media, *Media Sports Business*, February 20, 2002.

⁽²⁾ Total Expenditures less JSC Expenditures. Note that a small percentage of these expenditures could potentially be attributable to other categories of programming.

⁽³⁾ SNL Kagan, Cable Program Investor, April 17, 2007.

Table B-2. Estimated NBA on TNT Share of Market Value (Ford Estimation Methodology)

	Telecast Hours (1)	Share of Hours (2)	HHVH (000s) (3)	Pelative Share of Viewership (4)	Relative Price of Viewership (5)	Relative Market Value % (6)	Normal- ization Factor (7)	Normalized Relative Market Value (8)
2004 JSC (NBA) Program Suppliers/ Other* Total	240 <u>8,520</u> 8,760	2.74% <u>97.26%</u> 100.00%	492,895 <u>8,690,213</u> 9,183,108	5.37% <u>94.63%</u> 100.00%	2.39 1.44	12.83% 136.27% 149.10%	1.49 1.49	8.60% <u>91.40%</u> 100.00%
2005 JSC (NBA) Program Suppliers Total	245 <u>8,515</u> 8,760	2.80% <u>97.20%</u> 100.00%	459,958 <u>9,007,850</u> 9,467,808	4.86% <u>95.14%</u> 100.00%	2.05 1.40	9.96% 133.20% 143.16%	1.43 1.43	6.96% <u>93.04%</u> 100.00%

^{*}Based on Homonoff's testimony, non-£C programming on TNT is almost exclusively attributable to Program Suppliers.

⁽¹⁾ National Basketball Association (number of telecasts at 2.5 hours per telecast); SNL Kagan, Economics of Basic Cable Networks, 13th Edition.

⁽²⁾ Percentage distribution of Telecast Hours.

⁽³⁾ See Table G4. Household Viewing Hours, calculated as Telecast Hours x Avg. HH Delivered (000s).

⁽⁴⁾ Percentage distribution of HHVH.

⁽⁵⁾ Ford Testimony at 39.

⁽⁶⁾ Share of Viewing x Relative CPM.

⁽⁷⁾ Factor required to reduce total relative market value percentage to 100%

⁽⁸⁾ Relative Market Value % Normalization Factor.

APPENDIX C

Table C-1. Actual JSC on Top 25 Share of Market Value

	Actual Market Price (Mil.)*	Actual Market Value %
2004 JSC (MLB, NBA, NFL, NHL) (1) Program Suppliers/ Other (2) Total (3)	\$1,472.4 <u>\$5,844.2</u> \$7,316.6	20.12% 79.88% 100.00%
2005 JSC (MLB, NBA, NFL, NHL) (1) Program Suppliers/ Other (2) Total (3)	\$1,415.6 \$6,741.3 \$8,156.9	17.35% 82.65% 100.00%

^{*}Actual prices for JSC programming exclude production costs and therefore should be viewed as conservative.

⁽¹⁾ See Table C-3. Major League Baseball; and SNL Kagan, *Media Sports Business*, various issues.

⁽²⁾ See Table C3. Total Expenditures less JSCExpenditures.

Note that a small percentage of these expenditures could potentially be attributable to other categories of programming.

⁽³⁾ See Table C-3. SNL Kagan, Cable Program Investor, April 17, 2007.

Table C-2. Top 25 Cable Networks Valuation Comparison

	Telecast Hours (1)	Share of Hours (2)	HHVH (000s) (3)	Share of Viewership (4)	Relative CPM (5)	Relative Market Value % (6)	Normal- ization Factor (7)	Normalized Pelative Market Value (8)
2004 JSC (MLB, NBA, NFL, NHL) Program Suppliers/ Other Total	1,578 <u>217,422</u> 219,000	0.72% <u>99.28%</u> 100.00%	2,025,882 116,730,810 118,756,692		2.39 1.44	4.08% 141.54% 145.62%	1.46 1.46	2.80 % <u>97.20%</u> 100.00%
2005 JSC (MLB, NBA, NFL, NHL) Program Suppliers/ Other Total	1,210 <u>217,790</u> 219,000	0.55% <u>99.45%</u> 100.00%	1,744,159 121,979,453 123,723,612		2.05 1.40	2.89% 138.03% 140.92%	1.41 1.41	2.05% <u>97.95%</u> 100.00%

⁽¹⁾ Major League Baseball and National Football League (number of telecasts at 3 hours per telecast); National Basketball Association and National Hockey League (number of telecasts at 2.5 hours per telecast); SNL Kagan, Media Sports Business, various issues: SNL Kagan, Economics of Basic Cable Networks, 13th Edition.

⁽²⁾ Percentage distribution of Telecast Hours.

⁽³⁾ See Table C-4. Household Viewing Hours, calculated as Telecast Hours x Avg. HH Delivered (000s).

⁽⁴⁾ Percentage distribution of HHVH.

⁽⁵⁾ Ford Testimony at 39. All Other category based on Ford relative CPM for Program Suppliers.

⁽⁶⁾ Share of Viewing x Pelative CPM.

⁽⁷⁾ Factor required to reduce total relative market value percentage to 100%

⁽⁸⁾ Relative Market Value % Normalization Factor.

Table C-3. Top 25 Cable Network Programming Expenditures 2004-2005 (in Millions)

	2004	2005	Two Year Total
JSC Programming: (1)	2004	2000	70(0)
ESPN/ESPN2:			
NFL	4000 0	00000	04 000 0
NEL NBA	\$600.0	\$600.0	\$1,200.0
	200.0	200.0	400.0
MLB	200.0	200.0	400.0
NHL	70.0	0.0	70.0
MLS*	NA	NA	NA
NCAA Football/Basketball*	NA 10.6	NA 10.0	NA
NCAA Other	18.2	18.2	36.4
TNT: NBA	298.7		000.4
TBS:	298.7	307.7	606.4
	25.5	20.7	150.0
MLB	85.5	89.7	175.2
NCAA Football*	<u>NA</u>	<u>NA</u>	<u>NA</u>
JSC TOTAL**	\$1,472.4	\$1,415.6	\$2,888.0
Top 25 Cable Networks Excluding JSC Programn	ning: (2)		
	\$143.6	\$145.6	\$289.2
ESPN (excluding JSC Exp.)	1,210.5	1,648.2	2,858.7
CNN/HN	261.8	268.3	530.1
TNT (excluding JSC Exp.)	348.5	375.1	723.6
USA	453.5	476.2	929.7
Nickelodeon/Nick At Nite	199.8	224.8	424.6
TBS (excluding JSC exp.)	269.6	274.2	543.8
A&E	222.0	256.0	478.0
C-SPAN	26.3	29.3	55.6
Lifetime Television	316.1	322.4	638.5
Spike TV	205.3	231.0	436.3
The Weather Channel	112.5	119.5	232.0
TLC	118.9	121.7	240.6
ESPN2 (excluding JSC exp.)	256.7	285.0	541.7
ABC Family Channel	171.7	202.7	374.4
MTV	335.3	363.8	699.1
HGTV	137.7	148.7	286.4
History	157.5	173.3	330.8
Cartoon Network	107.1	114.0	221.1
ONBC	103.5	121.1	224.6
√H-1	155.0	180.5	335.5
FOX News	184.4	221.3	405.7
Comedy Central	185.7	197.3	383.0
Animal Planet	50.7	NA	50.7
AMC	110.5	NA	110.5
Food Network	NA	124.7	124.7
=X	<u>NA</u>	116.6	116.6
NON-JSC TOTAL	\$5,844.2	\$6,741.3	\$12,585.5
TOTAL TOP 25 EXPENDITURES	\$7,316.6	\$8,156.9	\$15,473.5
PERCENT OF TOP 25 EXPENDITURES (3)			
JSC	20.12%	17.35%	18.66%
PS/OTHER	79.88%	82.65%	81.34%

^{*}Data on rights fees paid for this programming was not publicly available.

^{**}Excludes production costs associated with JSC telecasts.

⁽¹⁾ SNL Kagan, Media Sports Business, various issues; and Major League Baseball (for MLB on TBS only).

⁽²⁾ Total Expenditures are from SNL Kagan, Cable Program Investor, April 17, 2007, less JSC amounts associated with each network.

⁽³⁾ Proportion of JSC and PS/Other Expenditures to Total Expenditures.

Table C-4. Top 25 Cable Network Viewing Hours

	2004 2005										
		Avg. HH		Avg. HH							
		Hours Del. (000) Total HHVH Total		Total Hours	Total Hours Del. (000) Total HHVH				HHVH (000)		
	(1)	(2)	(000) (3)			(1)	(2)	(000) (3)			2004-05
SC Programming:*											
SPN/ESPN2:											
NFL	69	6,451.1	445,125			60	6,272.1	376,323			821,4
NBA:	225	1.540.8	346,670			213	1,355.0	287,945			634.6
MLB:											00-1,0
ESPN	287	1,164.7	334,278			329	1,101,6	352,410			596,6
ESPN2	198	522.3	103,422			147	614.6	80,339			193,7
NHL	100	DLL.U	100,466			147	014.0	80,339			193,7
ESPN	125	557.8	69,724			NA	NA	NA.			
ESPN2	200	298.4	59,672				NA NA				69,7
MLS**						NA		NA			59,8
	NA	NA	NA			NA	NA	NA			
NCAA Football/Basketball**	NA	NA	NA			NA	NA	NA			- 1
NCAA Other**	NA	NA	NA			NA	NA	NA			- 1
NT:											
NBA	240	2,053.7	492,695			245	1,877.4	459,958			952,6
BS:											
MLB	234	744.0	174,096			216	774.0	157,184			341,2
NGAA Football**	NA.	NA.	NA.			NA	NA	NA			
						_					
SC TOTAL	1,578		2,025,682			1,210		1,744,169			3,770,0
op 25 Cable Networks Excluding JSC Programming:				PS Hours (4)	PS HHVH (4)				PS Hours (4)	PS HHVH (4)	
iscovery Channel	8,760	463.3	4,058,508	6,585	3,977,339	8,760	459.0	4,020,840	8.497		
SPN (excluding JSC)										3,900,215	8,079,0
NWHN	8,054	583.6	4,700,559	6,054	4,700,559	8,159	577.0	4,707,618	8,159	4,707,618	9,406,
	8,760	417.6	3,659,928	4,117	1,720,166	8,760	452.3	3,962,148	5,344	2,416,910	7,622.0
NY (excluding JSC)	6,520	1,020.0	8,690,219	8,520	8,690,213	8,515	1,057.9	9,007,850	8,515	9,007,850	17,598,0
ISA	8,760	757.6	6,638,328	8,760	6,638,328	8,760	680.6	5,963,808	8,672	6,904,170	12,602,
lickslodson/Nick At Nite	8,760	1,470.1	12,878,076	6,760	12,878,076	8,750	1,519,4	13,309,944	8,760	13,309,944	26,188,
BS (excluding JSC)	8,526	763.5	6,509,784	8,441	6,444,686	8,544	787.6	6,731,316	8,459	6,664,003	13,241,1
&E	9,760	522.5	4,575,348	8,672	4,529,595	8,750	501.5	4,393,140	8,672	4,349,209	8,966,4
SPAN	8,760	NA	NA	NA.	NA	8,760	NA	NA.	NA.	NA	
fatime Tolevision	8,760	873.6	7,654,468	8,585	7,501,398	8,760	893.0	7,922,680	8,672	7.744.453	15.477.1
pika TV	8.760	409.8	3,589,848	8.760	3,589,848	8,750	545.3	4,776,828	8,672	4,729,060	8,366,6
he Weather Channel	8,760	292.8	2,564,928	701	205,194	8,750	290.3	2,543,028	1,051	305,163	5,107,9
LC	9,760	465.5	4,077,780	8,672	4,037,002	8,760	348.3	3,051,109	8,410	2.929,064	7,128,6
SPN2 (excluding JSC)	6,362	218.4	1,826,302	8,362	1,826,302	8,613	229.2	1,974,393	8,613	1,974,393	3,800,6
BC Family Channel	8,760	498.3	4,385,108	8,410	4,190,504	8,760	523.8	4,588,488	8,585	4,496,718	8,953,8
ITV	8,760	503.0	4,406,280	8.760	4,406,280	8,750	557.8				
GTV	8,760	442.5	3,876,300	8,672	3,837,537			4,973,928	8,760	4,973,928	9,380,2
istory	8,760	501.3		8.672		8,750	460.0	4,029,600	8,672	3,989,304	7,905,9
			4,391,388		4,347,474	8,760	508.5	4,436,940	9,585	4,348,201	8,828,3
artoon Network	8,760	990.5	6,676,760	6,760	8,676,780	8,760	1,026.6	8,994,768	8,750	8,994,768	17,071,0
NBC	8,760	129.6	1,137,046	7,884	1,023,343	8,760	102.0	1,155,320	8,147	1,075,378	2,293,0
14-1	8,760	245,0	2,146,200	8,497	2,061,814	8,750	296.0	2,592,960	8,760	2,592,960	4,739,
OX News	8,760	752.5	6,591,900	6,570	4,943,925	8,760	805.5	7,056,180	6,482	5,221,573	13,648,
omedy Central	8,760	403.8	3,537,288	8,672	3,501,915	8,760	431,3	3,778,188	8,572	3,740,406	7,315,
nimat Planet	8,760	301.5	2,641,140	8,760	2,541,140	NA.	NA	NA	NA.	NA	2,641,
MC	8,760	403.8	3,537,268	8,497	3,431,169	NA.	NA	NA	NA	NA	3,537,
ood Network	NA	NA	NA.	NA.	NA	8,750	428.0	3,749,280	8,672	3,711,767	3,749,
X Network	NA.	<u>NA</u>	NA	<u>NA</u>	<u>NA</u>	8,750	497.5	4,358,100	8,585	4,270,938	4,358,
ON-JSC TOTAL	217,422		116,730,810	191,144	109,620,587	217,791		121,979,453	193,177	115,358,013	238,710,2
OTAL TOP 25 VIEWING HOURS	219,000		118,756,692			219,600		123,723,612			242,480,
ERCENT OF TOP 25 VIEWING HOURS											
sc			1.71%					1,41%			1.5
PS .					92.48%					93,24%	92.6

^{**}Seed on full scenom results (i.e., 2603-04 sprilled to 2004 for NSIA and NFIL, and 2004-05 applied to 2005).

**Data on rights fees paid for this programming was not publicly enablable.

**Uniform rights fees paid for this programming was not publicly enablable.

**Uniform rights fees paid for this programming was not publicly enablable.

**Uniform rights fees paid for this programming was not publicly enablable.

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Table C-5. Cable Network Programming Expenditure Patios: 2004-05

	2004		2	2005		OTAL .
		PS	JBC	PS	JBC	PS
Top 25 Expenditures (Mil.) (1)	\$1,472.4	\$5,844.2	\$1,415.6	\$6,741.3	\$2,888.0	\$12,585.5
Top 25 Programming Hours (2)	3,900	197,080	3,380	194,350	7,280	391,430
Top 25 Viewing Hours (000s) (3)	2,025,882	109,820,587	1,744,159	115,358,013	3,770,041	225,178,600
Expenditures Per Programming Hour (4)	\$377,538	\$29,654	\$418,817	\$34,686	\$396,703	\$32,153
Expenditures Per Viewing Hour (5)	\$0.727	\$0.053	\$0.812	\$0.058	\$0.766	\$0.056
Expenditures Per Viewing Minute (6)	\$0.012	\$0.001	\$0.014	\$0.001	\$0.013	\$0.001

⁽¹⁾ See Table C-3. JSC Expenditures include only MLB, NBA, NFL and NHL, and excludes production costs. PS Expenditures reflect all non-JSC expenditures.

⁽²⁾ Homonoff Testimony at HBH-5 and HBH-6.

⁽³⁾ See Table C-4.

⁽⁴⁾ Top 25 Expenditures divided by Top 25 Programming Hours.

⁽⁵⁾ Top 25 Expenditures divided by Top 25 Viewing Hours.

⁽⁵⁾ Expenditures Per Viewing Hour divided by 60.

APPENDIX D

Table D-1. FSN Coverage Areas and Average License Feesper Unduplicated Subscriber, 2004 and 2005

		2004		2005			
		Monthly	Un-		Monthly	Un-	
		Per Sub	duplicated	Revenue	Per Sub	duplicated	Revenue
Market/Region	Overlapping RSNs	Fee	Subscribers	(Millions)	Fee	Subscribers	(Millions)
NYArea (NY, NJ, CT, portions of PA)	YES, MSGN, FSNY, Empire	\$5.05	8,179	\$495,560	\$5.21	8,715	\$544,569
Chicago Area (IL, portions of IA, IN, WI)	FSChicago, Comcast Chicago, Chicagoland	\$2.34	3,607	\$101,267	\$2.27	4,763	\$129,902
New England Region (MA, CT, FI, ME, NH, VT, portions of NY)	FSNew England, NESN	\$2.79	3,800	\$127,372	\$3.09	3,950	\$146,430
Southern CA (Southern CA, NV, HI)	FSWest, FSWest 2, Oox San Diego	\$3.22	5,775	\$223,426	\$3.23	7,155	\$276,932
Bay Area (Northern CA, portions of NV, OF)	FSBay Area, CSN West	\$1.50	3,812	\$68,787	\$2.08	3,705	\$92,268
Southeast Region (FL, GA, TN, NC, SC, MS, AL, KY)	Sunsports, FSSouth, FSFL, Comcast SSE, Turner South, C-SET	\$1.71	16,736	\$344,166	\$1.94	17,340	\$404,170
Southwest Region (TX, OK, LA, AR, portions of NM)	FSSW, Cox NO	\$1.69	8,100	\$163,829	\$1.80	8,034	\$173,487
Pocky Mountain Region (CO, UT, MT, WY, portions of NM)	FSFM, Altitude	\$1.92	2,800	\$64,392	\$1.93	2,834	\$65,528
Midwest Pegion (MO, IN, KS, NE, portions of IA, OK, IL)	FSMW, Poyals TV	\$1.52	4,166	\$76,022	\$1.60	4,334	\$83,250
Ohio (OH, portions of WV)	FSOhio	\$1.55	4,773	\$88,080	\$1.67	5,021	\$98,136
Michigan (MI, portions of OH, IN)	FSDetroit	\$1.75	3,600	\$73,668	\$1.82	3,181	\$68,589
Northwest Region (WA, OR, ID, AK, portions of MT, CA)	FSNorthwest	\$1.77	2,409	\$50,859	\$1.85	3,482	\$76,390
Pittsburgh Area (PA, portions of OH, WV)	FSP(ttsburgh	\$1.45	2,350	\$40,533	\$1.50	3,030	\$53,460
Arizona (AZ, portions of NM, CA, TX)	FSArizona	\$1.50	1,800	\$31,500	\$1.65	2,300	\$43,200
Minnesota (MN, ND, SD, portions of WI, IA)	FSNorth-Minnesota	\$1.85	1,662	\$36,497	\$1.93	1,681	\$38,712
Wisconsin (WI)	FSNorth-Wisconsin	\$1.60	1,360	\$25,901	\$1.60	1,500	\$29,268
Mid-Atlantic Region (VA, MD, DE, DC, portions of PA)	Comcast Mid-Atlantic	\$1.90	4,499	\$102,235	\$1.95	4,700	\$107,640
Philadelphia Area (PA, NJ, DE)	Comcast Philadelphia	\$1.88	2,945	\$65,932	\$1.94	2,983	\$69,002
	Total/Weighted Average	\$2.21	82,373	\$2,180,026	\$2.35	88,708	\$2,500,933

Source: Kagan Research, Media Sports Business, various issues.

Table D-2. Geographic Distribution for the Most Widely Carried U.S. Distant Signals with JSC Sports, 2004-05

_	Station	Rank*	JSC	States of
Station	2004	2005	Sports	Distant Signal Carriage
WGN	1	1	MLB, NBA	44 States, DC, PR, VI
WPIX	2	2	MLB	CT, FL, ME, NJ, NV, NY, OH, PA,
				PR, TX, VI, VT, WY
WUAB	3	3	NBA	OH, PA
KTLA	5	4	NBA	AZ, CA, NM, NV, TX
WWOR	10	5	MLB	CT, NY, PA
WKBD	14	9	MLB, NBA	MI, OH
WPSG	9	10	MLB, NBA, NHL	MD, NJ, PA
WSBK	20	11	MLB	MA, ME, NH, NY, VT
KCAL	25	16	MLB, NBA, NHL	CA
WJZ	31	19	MLB	DE, MD, PA, VA, WV
KCOP	33	23	MLB	CA
KTVU	35	26	MLB	CA
KICU	42	28	MLB	CA

^{*}Among U.S. commercial stations; ranked by subscriber instances.

Source: Cable Data Corporation.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: <u>December 11, 2009</u> Fas Trut

James Trautman

Trautman Declaration

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

In the Matter of)
in the wratter of) Docket No. 2007-3 CRB CD 2004-2005
Distribution of the	,)
2004 and 2005)
Cable Royalty Funds)
)

DECLARATION OF JAMES TRAUTMAN

- My name is James Trautman. I am employed as the Managing Director of Bortz Media & Sports Group. In this proceeding, I have offered direct testimony, both written and oral, on behalf of the Joint Sports Claimants.
- 2. The purpose of this Declaration is to respond to requests made by the Copyright Royalty Judges during my direct oral testimony to provide data reflecting the average number of distant signal stations carried by the respondent systems that participated in the Bortz Survey in 2004 and 2005.
- 3. During my oral testimony during the direct hearings, the following colloquy occurred, beginning on page 202:

JUDGE WISNIEWSKI: Mr. Troutman [sic],looking at your Question 2-A, which simply asks the number of distant signal stations carried by the system or list them --

THE WITNESS: Yes. It's -- it's -- that's correct.

JUDGE WISNIEWSKI: -- can you tell me the average number of distant signal stations carried by the respondent systems in 2004?

THE WITNESS: I don't have that precise information, no.

JUDGE WISNIEWSKI: Would you supply

that to us, please?

THE WITNESS: Sure.

JUDGE WISNIEWSKI: Could you do the same for 2005?

THE WITNESS: Yes.

JUDGE WISNIEWSKI: Would you also give us the variance around that average in each case?

THE WITNESS: In terms of the number of signals?

JUDGE WISNIEWSKI: Yes.

THE WITNESS: Yes.

JUDGE WISNIEWSKI: Thank you. Let me take you to --

THE WITNESS: Could I ask a clarifying question?

JUDGE WISNIEWSKI: Sure.

THE WITNESS: Because of the stratified sampling approach, I believe that I should provide you actually either with two pieces of information or with whichever one you believe would be more useful.

I can provide you with the -- the simple breakout of the average number of signals based on the respondent pool, all 162, 171 respondents; or I can -- and I can also provide you with the -- the average number of distant signals after applying the weighting that's used to weight the royalty.

JUDGE WISNIEWSKI: Both would be useful. Both would be useful.

THE WITNESS: Okay.

JUDGE WISNIEWSKI: Thank you.

4. In response to Judge Wisniewski's request, I calculated the distant signal carriage patterns, including the average number of distant signals and the variance in each case, reflected in the Bortz survey respondent pool in 2004 and 2005. The results of those calculations are summarized below.

<u>Table 1²</u>
Distant Signal Carriage Patterns in the 2004 Bortz Survey

	Average Number of	Median Number of		Standard
Strata	Distant Signals	Distant Signals	Variance	Deviation
1	2.00	1.00	1.83	1.35
2	3.31	2.00	10.10	3.18
3	3.99	2.00	12.04	3.47
4	4.30	2.00	26.75	5.17
Total Sample	3.42	2.00	11.55	3.40
Universe Projection (Weighted Average)	2.69	NA	NA	NA

Note that the averages are significantly higher than medians, reflecting the fact that a subset of systems carries a very large number of distant signals (e.g., 10 or more).

² "Variance" is a measure of the dispersion in values for a particular variable and is the basis for calculating standard deviation. In this case, the "variable" is the number of distant signals. Variance is calculated by squaring the differences between the values of data and the mean and then computing their average. The "standard deviation" of a data set is simply the square root of the variance.

Variance and standard deviation both measure the dispersion of the distribution of values about the mean. However, the physical unit of the variance is the square of the physical unit of the data. Alternatively, the standard deviation is measured by the same physical unit as the original data. Accordingly, variance is not typically reported because it is expressed as the square of the variable it is measuring and therefore is difficult to evaluate while the standard deviation is more commonly reported because it is expressed in the same terms as the variable it is evaluating.

 $\frac{Table\ 2}{\text{Distant Signal Carriage Patterns in the 2005 Bortz Survey}}$

	Average	Median		
	Number of	Number of		Standard
Strata	Distant Signals	Distant Signals	Variance	Deviation
1	2.93	2.00	4.89	2.21
2	3.49	2.00	8.94	2.99
3	4.96	3.00	26.57	5.15
4	4.86	1.50	43.36	6.58
Total Sample	4.26	3.00	21.26	4.61
Universe Projection (Weighted Average)	3.45	NA	NA	NA

5. To further assist the Copyright Royalty Judges, below is a table showing the number of distant signals carried by respondents to the Bortz Survey.

 $\underline{Table\ 3}$ Distant Signals Carried by Bortz Respondents

		2004		2005
Number of Distant Signals	Respondents	% of Respondents	Respondents	% of Respondents
1	64	39.5%	59	34.5%
2	34	21.0%	23	13.5%
3	11	6.8%	18	10.5%
4	9	5.6%	15	8.8%
5	12	7.4%	13	7.6%
6 to 9	21	13.0%	28	16.4%
10 or more	<u>11</u>	<u>6.8%</u>	<u>15</u>	<u>8.8%</u>
Total	162	100.0%	171	100.0%

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I declare under penalty of perjury that the foregoing is true and correct.

Executed on: Decample 11, 2009 Sas Trut

James Trautman

JSC 04-05 Ex. 1

Cable Operator Valuation of Distant Signal Non-Network Programming: 2004-05

June 1, 2009



Cable Operator Valuation of Distant Signal Non-Network Programming: 2004-05

- Prepared by -

Bortz Media & Sports Group, Inc. 4582 S. Ulster Street Suite 1340 Denver, Colorado 80237

June 1, 2009



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SECTION I. INTRODUCTION AND SUMMARY

The Copyright Royalty Board (CRB) allocates among copyright owners the compulsory licensing royalties paid by cable systems to retransmit broadcast stations. Our understanding is that in doing so, the CRB determines what the cable systems would have paid, on a relative basis, for the different types of non-network programming on the distant television stations they carried — if, in fact, they had been required to negotiate in an open market absent compulsory licensing. During the past twenty-five years, the Joint Sports Claimants (JSC) have retained the principals of Bortz Media & Sports Group, Inc.¹ to establish and to implement a methodology for determining how such royalties would be allocated among different groups of copyright owners in such a market. This report summarizes our findings for the years 2004 and 2005. It also compares them with the findings that we presented to the Copyright Arbitration Royalty Panel (CARP) for the years 1998 to 1999 (the last cable distribution proceeding).²

A. Cable Operator Surveys

The cornerstone of our analysis is a survey of cable system operators (i.e., those responsible for paying the royalties at issue). For 2004 and 2005, as in all prior years, we sought to determine how cable operators valued, on a relative basis, the different categories of non-network distant signal television programming that they carried in

Prior to the formation of the CRB in 2004, allocation of cable royalties was the responsibility of the CARP (subject to review by the Librarian of Congress and Register of Copyrights) and, until 1993, the Copyright Royalty Tribunal (CRT).

Bortz Media & Sports Group, Inc. operated under the name Bortz & Company prior to January 1998. For purposes of this report, all references to the Company use the name Bortz Media & Sports Group, Inc. or Bortz Media.

those years. Each year we asked a random sample of cable operators how they would allocate a fixed budget among the different programming categories on the distant signals they actually carried in the preceding year (i.e., a "constant sum" approach). The results of our survey reflect the collective valuations made by the respondents.

As the CARP noted in its report allocating the 1990-92 cable royalties, our approach has the advantage of answering essentially the same question as the CARP (now CRB) must answer:

"The critical significance of the Bortz surveys is the essential question it poses to cable system operators, that is: What is the relative value of the type of programming actually broadcast in terms of attracting and retaining subscribers? That is largely the question the Panel poses when it constructs a simulated market. Further, the question asks the cable system operator to consider the same categories we are presented here in the form of claimant groups - that is, sports, movies, and the others. That is also what the Panel must do."4

As the CARP also noted, our surveys have been "focused more directly than any other evidence to the issue presented: relative market value."5

We describe in greater detail below the historical background and methodology of the Bortz surveys, including the manner in which we have sought to respond to the

Report of the Copyright Arbitration Royalty Panel in Docket No. 94-3 CARP CD 90-92 at 65 (May 31, 1996) (hereinafter, "1990-92 CARP Report").

ld. at 65.

As discussed in Section III, Bortz Media has been responsible for the design and implementation of multiple cable operator surveys in connection with the cable royalty distribution proceedings going back to the 1983 proceeding and including surveys conducted annually since 1991.

various issues raised in prior distribution proceedings by the CARP, CRT and experts concerning these surveys (see Sections II.A and B and Appendix A).

B. Results of the 2004-05 Cable Operator Surveys

We discuss in Section II.C below the results of the 2004 and 2005 surveys. The key finding is that cable operators would have allocated their 2004 and 2005 distant signal programming budgets as follows:

Table I-1.
Distant Signal Programming Valuation Studies, 2004-05

	2004	2005
Live professional and college team sports	33.5%	36.9%
Movies	17.8	19.2
Syndicated shows, series and specials	18.7	18.4
News and public affairs programs	18.4	14.8
Devotional and religious programming	7.8	6.6
PBS and all other programming on non-commercial signals	3.5	3.7
All programming on Canadian signals	0.2	0.3
Total*	100.0%	100.0%

^{*}Columns may not add to total due to rounding.

As Table I-1 reflects, in both 2004 and 2005, cable operators valued the live professional and collegiate sports programming on the distant signals they carried more highly than any other programming category. They would have allocated the largest percentage of a distant signal programming budget (33.5 percent in 2004 and 36.9 percent in 2005) to live professional and collegiate sports programming. The sports allocation is approximately twice that of the next most highly valued program category.

The value attributed to sports by cable operators is approximately equal to the aggregate value attributed to the two categories (movies and syndicated programming) represented by Program Suppliers in this proceeding – notwithstanding that movies and

syndicated programs on distant signals occupy more total hours and generate more cumulative "viewing hours" than sports programming. This result is consistent with the pattern evident in marketplace transactions, in which JSC programming typically commands a relative market value disproportionate to its share of broadcast time or viewing hours.⁶

Cable operators allocated 18.4 percent (2004) and 14.8 percent (2005) of the value of their distant signal non-network programming to news and public affairs programs, followed by devotional programming (7.8 percent in 2004 and 6.6 percent in 2005), programming on public television stations (3.5 percent in 2004 and 3.7 percent in 2005), and programming on Canadian distant signals (0.2 percent in 2004 and 0.3 percent in 2005).

As discussed further in Section II, respondents were only asked to allocate value to public television and Canadian programming in instances where their systems carried such stations as distant signals. Approximately one-third of cable systems that carried distant signals in 2004-05 carried public television signals as distant signals; less than four percent of cable systems that carried distant signals in 2004-05 carried Canadian signals as distant signals. Among systems that carried public television distant signals, respondents allocated an average value of 11.3 percent to public television programming in 2004 and 10.6 percent in 2005. For systems that carried Canadian distant signals, the average value attributed to the programming on these signals was 3.0 percent in 2004 and 3.8 percent in 2005.

Further, as discussed in Section II and Appendix A, systems carrying only public television or Canadian signals were excluded from the survey.

Analysis of this pattern was presented in the Bortz report submitted in the 1998-99 cable proceeding (see JSC 04-05 Ex. 2) as well as in the Testimony of Larry D. Gerbrandt of Paul Kagan Associates, Inc., submitted in the 1990-92 cable proceeding (see JSC 04-05 Ex. 3).

C. Comparison with 1998-99 Cable Operator Surveys

Over a period of more than two decades, JSC and other parties have commissioned numerous surveys of cable operators similar to those that we are presenting in this proceeding. In fact, since 1988, these surveys have been conducted annually. The JSC surveys, most of which have been designed by Bortz Media & Sports Group, Inc., have all employed a constant sum approach similar (in most instances identical) to that described above.

Results for 2004 and 2005 are similar to results obtained in the surveys submitted in the 1998-99 CARP cable royalty distribution proceeding and in other years (see Section III below). Sports has consistently been accorded the highest value, followed by movies, syndicated and news programming, devotional programming, public television programming, and Canadian programming.

Table I-2 compares the results of the 2004-05 surveys with the results of the 1998-99 surveys.

Table I-2.

Comparison of Distant Signal Programming Valuation Studies,
1998-1999 and 2004-2005

	1998	1999	2004	2005
Live professional and college team sports	37.0%	38.8%	33.5%	36.9%
Movies	21.9	22.0	17.8	19.2
Syndicated shows, series and specials	17.8	15.8	18.7	18.4
News and public affairs programs	14.8	14.7	18.4	14.8
Devotional and religious programming	5.3	5.7	7.8	6.6
PBS and all other programming on non-commercial signals	2.9	2.9	3.5	3.7
All programming on Canadian signals	0.4	0.2	0.2	0.3
Total*	100.0%	100.0%	100.0%	100.0%

^{*}Columns may not add to total due to rounding.

As in any survey, there is a certain amount of variability in the survey results from year-to-year. As discussed further in Section III, such variability is considered in the confidence intervals associated with the specific results (or "point estimates") for each year. Thus, while there are some differences in the specific point estimates for the various program categories over the four years shown above, the variations are generally minor. Most of the point estimates for 2004-2005 are within the confidence intervals surrounding the 1998 and the 1999 point estimates. The point estimates for some categories in 2004 and 2005 are slightly outside of the confidence intervals of point estimates in 1998 or 1999. However, based on my experience with the cable television industry, I am not aware of any significant market changes between 1998-99 and 2004-05 suggesting that the survey results reflect any significant change in the relative values of the different non-network programming types on distant signals.

Confidence intervals reflect the uncertainty surrounding a point estimate of value obtained using a sample-based survey methodology.

D. Analysis of 2004-05 Survey Results

In its report allocating the 1998-99 cable royalties, the CARP concluded that the Bortz survey was "an extremely robust (powerfully and reliably predictive) model for determining relative value" of the programming categories represented by JSC, the Program Suppliers and the National Association of Broadcasters.

It also determined that the Bortz survey was "more reliable than any other methodology presented" in determining the relative market value of these three claimant groups.

Accordingly, the CARP tied the royalty awards of each of these claimant groups directly to its shares in the Bortz surveys.

The CARP, however, did not rely upon the Bortz survey results to determine the awards to the Devotional Claimants (who had agreed to accept a share less than that reflected in the Bortz surveys). The CARP also did not rely upon the Bortz survey results to determine the awards to PBS, primarily because the Bortz survey respondents did not include those whose systems carried only distant public television signals. The CARP did conclude that the Bortz survey results provide a "floor" on the PBS award. In addition, the CARP did not rely upon the Bortz survey results to determine the award to the Canadians because of the small number of 1998-99 respondents that carried distant Canadian signals (two in 1998 and three in 1999). The CARP determined, however, that the Canadian award should be tied to, among other things, a comparable constant sum survey of cable operators conducted by the Canadians.

Report of the Copyright Arbitration Royalty Panel in Docket No. 2001-08 CD 98-99 at 31 (Oct. 21, 2003) ("1998-99 CARP Report").

As we have previously acknowledged, it is appropriate to adjust the Bortz survey results to account for cable operators that carry only PBS and/or only Canadian distant signals (neither of which are included in our survey). We proposed a methodology for adjusting our results to account for this factor in the 1998-99 proceeding, but the CARP did not accept that adjustment methodology (see pages 39-40 of Appendix A below).

In addition, the CARP observed (and we have acknowledged) that respondents to our survey are not informed that substantial portions of the movies and syndicated programming on Superstation WGN (the most widely carried distant signal) are not compensable in this proceeding because these programs are not broadcast by WGN on its over-the-air Chicago signal; thus, the values that respondents to our survey attribute to these categories likely represent a "ceiling" in that respondents are considering all programming on WGN rather than just the compensable programming on WGN. In the 1998-99 proceeding, PBS proposed a methodology for adjusting the Bortz survey results to account for this issue, but the CARP did not accept that methodology. The same issue affects the Devotional Claimants since a significant amount of the Devotional programming on WGN also is non-compensable in this proceeding.

In summary, we believe that our survey results provide a valid and reliable estimate of how cable operators valued the different types of non-network programming categories on the distant signals they actually carried in 2004 and 2005, and by extension the best approximation of how the cable operators themselves would have allocated the compulsory licensing royalties they paid to carry that programming. However, we recognize that some adjustment to the specific point estimates of the survey results may be appropriate to account for both the exclusion of systems that

carry only PBS or Canadian distant signals, as well as to account for the fact that survey respondents are not informed that certain movies, syndicated and devotional programming on Superstation WGN are non-compensable.

SECTION II. THE 2004-05 CABLE OPERATOR SURVEYS

This section provides a brief historical background on the cable operator surveys presented in cable copyright proceedings, summarizes the methodology underlying the 2004 and 2005 Bortz Media surveys, and sets forth the results of the 2004 and 2005 surveys.

A. Historical Background

Over a period of nearly thirty years, JSC has commissioned surveys of cable operators in connection with cable copyright royalty distribution proceedings. Other parties, specifically the National Association of Broadcasters (NAB), the Devotional Claimants and Public Broadcasting Service (PBS), have supported the JSC surveys in prior proceedings (with or without adjustments). NAB also submitted a cable operator survey to the Copyright Royalty Tribunal (CRT) in the 1983 proceeding, and the Canadian Claimants submitted cable operator surveys in the 1990-92, 1998-99 and 2000-03 proceedings. The purpose of all these surveys has been to determine how cable operators value, on a relative basis, the different categories of non-network programming on the distant signals that they carried.

There have been important similarities in the methodology employed in conducting these surveys, including the use of "constant sum" questions that allow the cable operators themselves to place relative values on different program types. The constant sum approach used in the surveys conducted by JSC, the NAB and the Canadians is a well-recognized market research tool that is used in a variety of contexts when a comparative value measure is being sought. As noted above, this tool allows respondents to address the same task that has confronted first the Copyright Royalty

Tribunal, more recently the Copyright Arbitration Royalty Panel and now the Copyright Royalty Board – that is, the task of allocating a fixed amount among several program categories based upon the relative value of those categories. Numerous expert witnesses for JSC and other parties have testified in support of the value and relevance of cable operator surveys, as well as the validity of the constant sum approach.

Bortz Media principals were initially retained by the JSC to determine the comparative value of distant signal non-network programming in 1983, and sought to improve upon earlier cable operator surveys. In the more than twenty-five years that have followed, a continual effort to refine and improve the Bortz Media cable operator surveys has been made – giving consideration to issues raised by the CRT and CARP, as well as by other claimants. The surveys completed for 2004 and 2005 reflect the benefit of those efforts.

B. Research Methodology

The research methodology employed in designing and conducting the 2004 and 2005 cable operator surveys is described in detail in Appendix A to this report. A brief overview is provided below.

In each of the 2004 and 2005 studies, as in prior studies, we surveyed only "Form 3" systems, which accounted for over 95 percent of the cable royalty payments. We utilized a "stratified" random sampling approach to select the systems to be surveyed, with the stratification based on copyright royalty payments (i.e., those cable operators who paid the greatest amount of royalties had the greatest likelihood of being included in our sample). This approach was intended to ensure that the responses we received would provide a statistically valid predictor for the allocation of royalty payments by all Form 3 cable systems that carried distant signals.

Questionnaires for the 2004 and 2005 studies were designed so that respondents had the qualifications and information necessary to address the key constant sum valuation question. The initial survey question "screened" potential respondents for their involvement in making decisions related to the carriage of distant signals, resulting in a qualified respondent group consisting overwhelmingly of general managers, marketing directors/managers and programming directors/managers. Respondents were (on multiple occasions) read a list of the distant signals actually carried by the systems based on filings they made at the Copyright Office and were specifically instructed to consider only the non-network programming on those distant signals.

Qualified respondents were asked preparatory questions about the popularity and advertising usage of distant signal non-network programming. These initial questions were intended to focus the respondent on the value of various programming types. Respondents were then asked the key constant sum question, which required them to allocate a distant signal non-network programming budget among different program categories.

Ted Heiman & Associates, a leading cable industry market research firm, was retained to conduct the telephone surveys in both years. Only interviewers who specialize in surveying professional and managerial personnel were utilized; interviewers were not told the name of the client or given any information, other than that on the questionnaire, regarding the nature of the study. Response rates of 65 percent and 68 percent were obtained on the key constant sum question in 2004 and 2005, respectively, comparable to or above response rates achieved in the 1998 and 1999 surveys.

C. 2004-05 Cable Operator Survey Results

1. Budget allocation. The value of distant signal programming to cable operators lies primarily in its ability to attract and to retain subscribers -- particularly since cable operators may not insert any advertising on distant signals. As such, we designed the key survey question in the 2004 and 2005 studies to measure the relative value to cable operators, in terms of attracting and retaining subscribers, of the different categories of non-network distant signal programming carried by their systems. Consistent with the task faced by the CRB, operators were asked to express this relative value allocation in terms of a percentage of a finite pool (a programming "budget") that would have been allocated among the various types of programming.

In each of the 2004 and 2005 studies, cable operators allocated the largest percentage of their distant signal non-network programming budget to live professional and college sports. Sports programming was accorded 33.5 percent of the value in 2004 and 36.9 percent in 2005 (see Table II-1 below). The two categories represented by MPAA in this proceeding, movies and syndicated shows, series and specials, ranked between second and fourth in each of the two surveys. The total allocation to these two categories was 36.5 percent in 2004 and 37.6 percent in 2005, or approximately the same as the sports allocation.

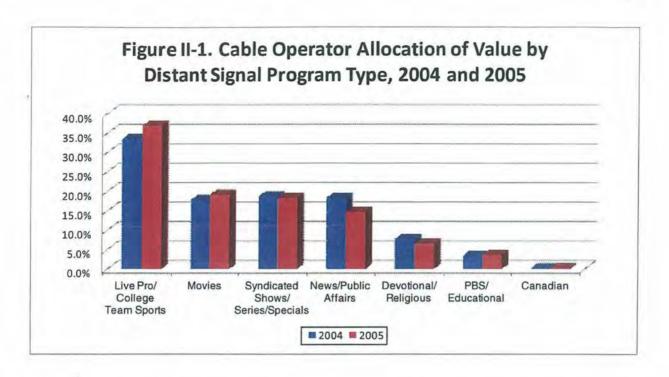
Table II-1.
Distant Signal Programming Valuation Studies, 2004-05

	2004	2005
Live professional and college team sports	33.5%	36.9%
Movies	17.8	19.2
Syndicated shows, series and specials	18.7	18.4
News and public affairs programs	18.4	14.8
Devotional and religious programming	7.8	6.6
PBS and all other programming on non-commercial signals	3.5	3.7
All programming on Canadian signals	0.2	0.3
Total*	100.0%	100.0%

^{*}Columns may not add to total due to rounding.

Cable operators allocated 18.4 percent (2004) and 14.8 percent (2005) of the value of their distant signal non-network programming to news and public affairs programs, followed by devotional programming (7.8 percent in 2004 and 6.6 percent in 2005), programming on public television stations (3.5 percent in 2004 and 3.7 percent in 2005), and programming on Canadian distant signals (0.2 percent in 2004 and 0.3 percent in 2005).

Survey responses for 2004 and 2005 are illustrated graphically in Figure II-1.



2. PBS and Canadian allocations. Respondents were asked to allocate value to public television and Canadian programming only in instances when their systems actually carried such stations as distant signals. As shown on Table II-2 below, respondents at systems that carried public television distant signals allocated an average value of 11.3 percent to public television programming in 2004 and 10.6 percent in 2005.¹¹

In 2004, 59 of the 162 responding systems carried one or more public television distant signals and were therefore asked to assign a value to distant signal public television programming. In 2005, 68 of the 171 responding systems carried one or more public television distant signals.

Table II-2.

Distant Signal Programming Value Among Systems
Carrying Public Television Distant Signals, 2004-05

	2004	2005
Live professional and college team sports	25,3%	36.2%
News and public affairs programs	20.0	17.2
Movies	17.3	16.4
Syndicated shows, series and specials	18.3	13.7
PBS and all other programming on non-commercial signals	11.3	10.6
Devotional and religious programming	7.2	5.8
All programming on Canadian signals	0.6	0.2
Total*	100.0%	100.0%

^{*}Columns may not add to total due to rounding.

Table II-3 shows that, for systems that carried Canadian distant signals, the average value attributed to the programming on these signals was 3.0 percent in 2004 and 3.8 percent in 2005.¹²

In 2004, 11 of the 162 responding systems carried one or more Canadian distant signals and were therefore asked to assign a value to distant signal Canadian programming. In 2005, 13 of the 171 responding systems carried one or more Canadian distant signals. It should be noted that the comparable numbers in 1998 and 1999 were two of 138 and three of 132, respectively.

Table II-3.

Distant Signal Programming Value Among Systems
Carrying Canadian Distant Signals, 2004-05

	2004	2005
Live professional and college team sports	29.4%	41.8%
News and public affairs programs	25.1	16.6
Movies	11.4	15.8
Syndicated shows, series and specials	18.3	13.0
Devotional and religious programming	7.0	5.1
PBS and all other programming on non-commercial signals	5.8	3.9
All programming on Canadian signals	3.0	3.8
Total	100.0%	100.0%

3. Responses to preparatory questions. Respondents were asked to identify the types of distant signal programming they carried that were most popular with their subscribers. This question was asked on an unaided basis (i.e., respondents were not read a list of programming categories), and responses were tabulated without weighting by the amount of royalties paid by the responding systems. Multiple responses were allowed. The responses to this question are summarized below on Table II-4.

Table II-4.

Distant Signal Program Popularity Among Subscribers, By Program Type,
2004 and 2005

	Percent "Most Popular with Subscribers"	
Response	2004	2005
Live professional and college team sports	75.7%	65.7%
Syndicated shows, series and specials	29.1	35.6
Movies	20.4	28.7
News and public affairs programs	28.9	19.0
PBS and all other programming on non-commercial signals	13.2	5.2
Devotional and religious programming	0.9	3.4
All programming on Canadian signals	0.0	0.4
Other*	0.2	0.0
Total**	168.4%	158.0%

^{*}The other category as reported by Bortz Media included certain responses that were reclassified to other categories upon review by Bortz Media.

Cable operators were also asked whether they used distant signal programming as part of their advertising and promotional efforts. As shown below on Table II-5, only about 11 percent of respondents reported using distant signal programming in their advertising and promotional efforts in 2004, and the percentage was less than five percent in 2005.

Table II-5.

Percent of Systems Using Distant Signal Programming in Cable Advertising and Promotion, 2004 and 2005

Response	2004	2005
Use distant signal programming ("yes")	11.1%	4.9%
Do not use distant signal programming ("no")	88.9	95.1
Total	100.0%	100.0%

^{**}Total exceeds 100 percent due to multiple responses.

The cable systems that did use distant signal non-network programming in their advertising and promotional efforts were asked which types of programming they featured in these efforts. This question was first asked on an unaided basis, and respondents were then asked specifically about their use of programming types not mentioned on an unaided basis. As with the popularity question, responses were not weighted by the amount of royalty paid by the responding systems. The responses to this question are summarized on Table II-6.

Table II-6.
Use of Distant Signal Programming in Cable Advertising and Promotion,
Percent of Systems Using By Program Type, 2004 and 2005

	Percent of Systems Using Programming Category*		
Response	2004	2005	
Live professional and college team sports	75.6%	96.1%	
Movies	12.2	80.5	
News and public affairs	58.7	62.2	
Syndicated shows, series and specials	27.3	62.2	
PBS and all other programming on non-commercial signals	7.4	55.7	
All programming on Canadian signals	0.0	3.9	
Devotional and religious programming	0.0	0.0	
Other	0.0	2.6	
Total**	181.2%	363.2%	

^{*}All percentages based only on respondents using distant signal programming for advertising/promotion.

Finally, respondents that featured distant signal non-network programming in their advertising and promotional efforts were asked which of the types of programming that they featured was most important. The responses to this question are summarized in Table II-7.

^{**}Total exceeds 100 percent due to multiple responses.

Table II-7.
Use of Distant Signal Programming in Cable Advertising and Promotion,
Most Important Program Type, 2004 and 2005

	Percent "Mos	t Important"
Response	2004	2005
News and public affairs	17.6%	45.2%
Live professional and college team sports	50.2	44.4
Movies	5.6	2.6
Syndicated shows, series and specials	21.7	0.0
PBS and all other programming on non- commercial signals	1.9	0.0
Devotional and religious programming	0.0	0.0
All programming on Canadian signals	0.0	0.0
Other/Don't Know	3.1	<u>7.8</u>
Total*	100.0%	100.0%

^{*}Columns may not add to total due to rounding.

Responses to both the "programming featured" and "most important to feature" questions should be viewed with caution based on the very limited number of respondents that reported using distant signal programming in their advertising and promotional efforts.

SECTION III. COMPARISON OF 2004-05 CABLE OPERATOR SURVEY RESULTS WITH THE RESULTS OF PRIOR CABLE OPERATOR SURVEYS

This section compares the results of the 2004 and 2005 cable operator surveys to the results of surveys conducted for prior years, focusing on the surveys addressing the years 1998 and 1999 that were submitted in the most recent CARP cable proceedings. Table III-1 shows the results of the constant sum surveys conducted on behalf of JSC and NAB. It demonstrates that, notwithstanding a number of changes in methodology over the years (many in response to issues raised by the CRT, CARPs or other parties), the results have been relatively consistent. For example, since 1983 JSC programming has consistently received the highest value by cable system operators in the constant sum surveys.¹³

As noted above, we believe it is useful to compare the results of our surveys over the years for the purpose of understanding broad trends in response patterns (i.e., for identifying long-term consistency in values or a long-term increase or decline in value for a particular category). At the same time, it is also important to understand that the surveys are not designed as a "tracking study." Rather, a unique and different sample of potential respondents is selected from the Form 3 universe each year. As

The early (1978-1980) cable operator surveys showed movies as the most highly valued programming. The 1978 survey placed a particularly high value on movies, but it was rightly criticized for not properly informing the respondents that they were valuing the programming shown on distant signals, as opposed to cable programming services including premium movie services such as HBO and Showtime.

such, some variability in results from year-to-year is to be expected, based in part on differences in samples and also on the variability in results inherent in any individual survey.

In a tracking study, the same group of respondents is asked the same questions over a period of time in order to monitor changes in attitudes or behavior during that time period.

Table III-1.
Summary of Cable Operator Distant Signal Programming Value Allocations, 1978-2005

	Year	Live Professional & College Team Sports	Movies	Syndicated Shows, Series and Specials	News and Public Affairs	Devotional	PBS and All Other Non-Comm.	Canadian	Total*
	1978	\$27	66	5	2	NA	NA	NA	\$100
BBDO	1979 - MSOs	\$35.00	38.00	10.57	9.40	NA	7.03	NA	\$100.00
	1979 - Managers	\$33.98	42.98	10.62	6.21	NA	6.21	NA	\$100.00
	1980	\$32.95	37.76	11.76	12.62	NA	4.91	NA	\$100.00
ELRA	1983	\$35.66	25.02	15.84	13.33	7.24	2.51	0.40	\$100.00
BBC	1983	36.1%	30.2	18.6	12.1	NA	3.1	NA	100.0%
Bortz & Company	1986	38.5%	25.1	17.5	11.3	3.5	4.1	0.1	100.0%
	1989	34.2%	31.2	16.9	11.8	4.3	1.3	0.2	100.0%
Burke	1990	37.2%	30.1	14.5	11.9	3.6	2.7	-	100.0%
	1991	36.3%	25.7	15.6	14.8	4.3	2.9	0.5	100.0%
	1992	38.8%	25.6	16.0	12.4	3.9	3.0	0.3	100.0%
	1993	43.4%	23.4	14.4	12.6	4.0	2.0	0.2	100.0%
Bortz & Company	1994	39.7%	26.3	16.4	11.2	3.7	2.1	0.5	100.0%
	1995	41.4%	25.8	16.3	10.8	2.1	3.4	0.3	100.0%
	1996	36.9%	22.3	16.8	16.4	4.5	2.8	0.4	100.0%
	1997	42.5%	20.7	15.8	14.3	2.3	3.7	0.6	100.0%
	1998	37.0%	21.9	17.8	14.8	5.3	2.9	0.4	100.0%
	1999	38.8%	22.0	15.8	14.7	5.7	2.9	0.2	100.0%
	2000	35.4%	23.6	16.2	15.6	6.6	2.6	-	100.0%
	2001	35.4%	20.1	18.6	16.5	6.2	2.9	0.3	100.0%
Bortz Media &	2002	36.2%	20.6	16.8	16.3	6.4	3.9	-	100.0%
Sports Group	2003	37.8%	20.1	15.6	17.3	6.1	3.0	0.2	100.0%
	2004	33.5%	17.8	18.7	18.4	7.8	3.5	0.2	100.0%
	2005	36.9%	19.2	18.4	14.8	6.6	3.7	0.3	100.0%

^{*}Rows may not add to total due to rounding.

NOTE: Prior to 1992, category definitions, the number of categories addressed and the research methodology of individual surveys summarized above varied, in some cases significantly.

Table III-2 summarizes value ranges by programming category in 1998-99 and 2004-05, factoring in the confidence intervals associated with the estimate for each programming category in each year. See Appendix A at 50-53. Confidence intervals reflect the uncertainty surrounding a point estimate of value obtained using a sample-based survey methodology. The range presented therefore illustrates the range of possible "true values" that would have been obtained (in this case, with 95% confidence) if all Form 3 systems that carried distant signals in 2004-05 had been surveyed.

Table III-2.

Comparison of Distant Signal Programming Valuation Studies, 1998-2005*

	1998	1999	2004	2005
Live professional and college team sports	34.3% - 39.7%	35.9% - 41.9%	31.2% - 35.8%	34.4% - 39.4%
Movies	20.3 - 23.5	20.1 - 24.1	16.5 - 19.1	17.4 - 21.0
Syndicated shows, series and specials	16.2 - 19.4	14.0 - 17.2	16.5 - 20.9	16.3 - 20.5
News and public affairs programs	13.0 - 16.6	12.4 - 16.8	16.7 - 20.1	13.1 - 16.5
Devotional and religious programming	4.5 - 6.1	4.7 - 6.9	7.1 - 8.5	5.8 - 7.4
PBS and all other programming on non-commercial signals	1.9 - 3.9	1.6 - 4.2	2.6 - 4.4	2.8 - 4.6
All programming on Canadian signals	0.0 - 0.9	0.0 - 0.4	0.0 - 0.4	0.1 - 0.5

^{*}Range reflects potential values for each year based on 95% confidence interval.

APPENDIX A. CABLE OPERATOR SURVEY HISTORICAL BACKGROUND AND METHODOLOGY

Appendix A initially summarizes the history and evolution of cable operator surveys conducted in conjunction with CRT and CARP proceedings. This appendix then describes the methodology used in questionnaire design, sampling and interviewing for the cable operator surveys completed for 2004 and 2005, and it provides a statistical evaluation of survey results. The 2004 and 2005 survey instruments are set forth in Appendix B.

A. Historical Background

1. 1989 and prior surveys. Bortz Media principals (as members of Browne, Bortz & Coddington, Inc. [BBC]) were initially retained by JSC to determine the comparative value of distant signal non-network programming in 1983. With the assistance of Drs. Michael Wirth (Professor and Chairperson of the Department of Mass Communications) and George Bardwell (Professor of Mathematics and Statistics) of the University of Denver, BBC designed a study employing a constant sum survey technique to determine cable operators' valuation of distant signal non-network programming. The survey was executed by Burke Marketing Research (one of the largest market research firms in the United States), with administrative involvement and oversight by BBC. In developing the study, BBC sought to improve upon earlier constant sum studies that had been performed by the Batten, Barton, Durstine & Osborn, Inc. (BBDO) Research Department on behalf of the JSC and submitted in the 1978, 1979 and 1980 CRT proceedings. In particular, BBC sought to be responsive to concerns expressed by the Tribunal with respect to the prior BBDO studies and thus made several improvements in an effort to address those concerns.

This initial BBC study was presented to the Tribunal in the 1983 proceeding, as was an independent study completed by the ELRA Group for the National Association of Broadcasters (NAB). The results of the BBC and ELRA surveys were similar, and the findings of both studies were also generally consistent with those of the earlier BBDO surveys. See Table III-1.

Bortz Media principals were again retained by the JSC to develop surveys for both 1986 and 1989. The 1986 case was settled and therefore the results of this study were not presented in the 1986 proceeding. Results for 1986, which were subsequently presented to the CRT in the 1989 proceeding, were similar to those of the 1983 BBC and ELRA surveys. See Table III-1.

The study design for the 1989 survey reflected additional efforts to resolve issues raised by the Tribunal – in this instance focusing on issues raised in the CRT's decision in the 1983 case (which had not yet been released at the time the 1986 study was conducted). Survey and sample design again reflected the input of Drs. Wirth and Bardwell, as well as the assistance of Dr. Leonard Reid (Professor and Head of the Department of Advertising at the University of Georgia) who testified in the 1989 proceeding. Burke Marketing Research executed the survey. Results of the 1989 study were presented to the Tribunal in the 1989 proceeding. These results were comparable to those obtained in all of the prior constant sum studies. See Table III-1.

The 1989 study was supported by the NAB, PBS and the Devotional Claimants. The study was, however, criticized by the Program Suppliers. In its 1989 Final Determination, the CRT accorded weight to the Bortz survey and specifically acknowledged improvements made over the 1983 study. The Tribunal, however,

accepted certain of the Program Suppliers' criticisms and chose not to accord full weight to the survey results.

2. 1990 through 1992 surveys. In our 1989 report to the CRT, we also presented the results of a survey for 1990 that the Joint Sports Claimants had retained Burke Marketing Research to execute. Burke used the same sample and essentially the same questionnaire used by Bortz for the 1989 survey. The 1990 results were similar to the results of all prior surveys. See Table III-1.

Prior to the release of the Tribunal's 1989 Final Determination, Bortz conducted a survey (executed by Burke) for 1991 employing essentially the same methodology as in 1989 and 1990. The 1991 results were again similar to those of prior surveys. See Table III-1.

Following the release of the 1989 Final Determination in April 1992, Bortz made several modifications in designing a survey for 1992. Questionnaire and sample development again relied upon Drs. Wirth and Bardwell of the University of Denver, along with Dr. Samuel Book (President of MTA Marketing) who had testified in the 1989 proceeding. The resulting questionnaire (again executed by Burke) incorporated changes that were responsive to Program Suppliers' criticisms that had been accepted by the CRT in the 1989 proceedings. In essence, the 1992 survey reflected the culmination of a decade of improvements and refinements intended to enhance the accuracy and applicability of the Bortz cable operator survey for the purpose of assessing the relative value of distant signal programming. Even with these refinements, the results of the 1992 survey were again comparable to those obtained in earlier surveys. See Table III-1.

The Canadian Claimants conducted constant sum surveys of cable operators carrying distant Canadian signals in 1991 and 1992. The surveys were designed to estimate the relative values of the different types of programming on the Canadian signals, and (similar to the Bortz Media surveys) asked respondents to allocate a percentage of total programming value among six types of programming on these signals.

3. 1993 through 2005 surveys. Bortz Media has conducted surveys from 1993 forward, employing the same methodology, questionnaire and sampling design as in 1992. Telephone interviewing was performed by Burke Marketing Research through 1997. In 1998 through 2000, Bortz Media retained Creative & Response Research to conduct telephone interviewing. Ted Heiman & Associates provided telephone interviewing services for the years 2001 forward.

It is also worth noting that the Canadian Claimants conducted similar constant sum surveys that were presented in both the 1998-99 and 2000-03 cable royalty distribution proceedings.

B. Response to Issues Raised by the CRT

As indicated above, different constant sum surveys, conducted by Bortz Media principals and others, have been performed since the commencement of the CRT proceedings. Beginning in 1983 the basic approach and methodology have remained essentially the same. However, as suggested in the preceding historical review, Bortz Media has made a number of refinements over the years to address concerns raised in prior proceedings. Certain refinements made in response to issues raised by the CRT are summarized below. Issues raised by the CARP are discussed in the next section.

1. Respondent qualifications. The early BBDO surveys were directed at top executives of cable multiple system operators (MSOs). Beginning in 1983, BBC redesigned the survey to focus on interviewing management personnel at the cable system level in order to obtain responses from the person at the system "most familiar with programming carried by the system." The interviewers initially asked for the system general manager; if this was not the person "most familiar," the interviewer asked to be directed to the appropriate individual.

The Tribunal determined in the 1983 proceeding that the BBC survey "was designed to ascertain the proper individual." The same qualifier was used in the 1989 through 1991 studies. However, in its 1989 Final Determination the CRT expressed concern regarding the qualifications of approximately 11 percent of the survey respondents and also indicated uncertainty with respect to the involvement of the respondents in the program budgeting process. 16

We believe respondents to the 1989 through 1991 surveys were qualified and were likely involved in program budgeting, as they were overwhelmingly individuals with general management, marketing or programming responsibilities. In conducting numerous market research studies and many other analyses involving cable systems operations for approximately two decades, it is our experience that these are the individuals at the system level most responsible for decisions (including budgeting) regarding programming. Further, in several instances where the titles of respondents did not imply programming oversight, the systems involved were small properties where

Report of the Copyright Royalty Tribunal in Docket No. CRT 91-2-89CD, 57 Fed. Reg. 15,286, 15,301 (Apr. 27, 1992).

Report of the Copyright Royalty Tribunal in Docket No. CRT 84-1 83CD, 51 Fed. Reg. 12,792, 12810 (Apr. 15, 1986).

individuals frequently have multiple responsibilities. Nevertheless, in light of the concerns expressed by the CRT in the 1989 case, the initial respondent qualifying question was modified in the 1992 and subsequent surveys to ensure that the respondent was the person "most responsible for programming decisions at the cable system." This approach has been utilized in all subsequent surveys, and as indicated later in this appendix, respondents in 2004 and 2005 consisted overwhelmingly of general managers or senior programming and marketing executives (see *infra* pages 47-48).

2. Category definitions. Since the survey was first introduced into these proceedings, concerns have been expressed regarding the wording of descriptions of the various programming types. In the 1983 study, BBC developed category definitions that improved upon those used in earlier surveys; ELRA also provided new category definitions. The BBC categories were retained in the 1986 through 1991 surveys while two new categories were added in the 1986 to 1992 surveys to represent the Devotional and Canadian Claimants.

We believe the descriptions used in these surveys provided respondents with clearly distinguishable and readily understood categories for which they were able to allocate value. We also acknowledge the potential for certain "fringe" programming to be interpreted as belonging in one category when for the purposes of these proceedings it may belong in another. However, categories must be defined as concisely as possible. Moreover, we believe the use of examples is inappropriate in that it necessarily excludes programming types not included as examples.

While acknowledging the complexity of the task, the Tribunal in its 1989 Determination continued to express a desire for enhanced programming definitions. ¹⁷ In response, beginning with the 1992 survey Bortz Media incorporated the use of modified category descriptors based on definitions developed by the CRT itself to further aid respondents in accurately distinguishing among categories. In particular, adjustments were made to the syndicated and station-produced programming categories. The category definitions used in the 1992 survey have been used in all subsequent surveys including those conducted for 1998, 1999, 2004 and 2005.

3. Excluded systems and program categories. The objective of our surveys has been to determine the relative value that cable operators attach to the different categories of non-network programming on the distant signals that they actually carried. Consistent with that objective, not all cable systems are eligible for inclusion in our survey samples; nor are all survey respondents asked to value all types of programming represented in the royalty allocation proceedings. We discuss below the specific circumstances in which systems and programming categories are excluded from consideration.

The first situation involves Form 1 and 2 systems. Only Form 3 systems are eligible for inclusion in our samples. Form 1 and 2 systems have been excluded from our analysis because distant signal carriage data for these systems are not readily available – restricting our ability to question systems in this group about the signals that they actually carried. As explained below, we determine the identity of the particular distant signals for each Form 3 cable system in our sample by examining that system's Statement of Account filing at the Copyright Office; we then refer to these specific

¹⁷ Id. at 15,300.

distant signals in the survey questionnaire so that there is no confusion concerning the programming the respondent is asked to value. While the Copyright Office Statements of Account identify the distant signals that Form 3 cable systems carry, they do not do so for Form 1 and 2 systems. It should be noted that the Form 1 and 2 systems accounted for less than five percent of the 2004 and 2005 royalties. Furthermore, neither the CRT nor the CARP ever suggested that Form 1 and 2 systems should be included in our samples.

The second situation involves individual programming categories in instances where those categories were not among the distant signal programming carried by a particular cable system. In all of our surveys, questions regarding public television and/or Canadian stations have been deleted in instances where a cable system did not carry such stations, and respondents have not been asked to make a programming allocation to these categories. The CRT expressed concern regarding this approach in both the 1983 and 1989 proceedings. Bortz Media agrees with the Tribunal's Determination in the 1989 proceeding that programming not carried may have had a certain value and possibly would have been carried had it been available at a lower price (i.e., at a price that was less than that being charged under the statutory royalty rate). At the same time, we also concur with the Tribunal's 1989 conclusion that our survey design is intended to measure value based on programming actually carried and that questions regarding any distant signal programming in instances where it was not carried would cause confusion.¹⁸

¹⁸ Id. at 15,299–300. Note that if values were attributed to noncommercial and Canadian stations where no such stations were actually carried, the same approach would need to be followed for cable systems that carried no distant commercial signals or no distant signals at all.

Finally, we have not surveyed cable systems that carry no distant signals or cable systems that carry only a distant signal for which comparisons among the relevant Phase I program categories cannot be made (i.e., those that carried only a distant PBS station or only a distant Canadian station). As explained above, we have sought to determine the relative values of the different types of programming actually carried by the cable operator respondents. It is not possible to obtain an estimate of relative value where the cable operator carries no distant signals or carries only one type of distant signal programming. Further, as discussed in Section I, we acknowledge that an adjustment should be made to the Bortz survey results to account for cable operators that carry only PBS and/or only Canadian distant signals (which are not included in our survey).

4. Respondent recall. In the 1983 proceeding, the Tribunal expressed concern regarding the ability of respondents to recall programming actually carried in 1983, given that the BBC study presented in the 1983 proceeding was not actually conducted until 1985. To address this concern, surveys since 1989 have been conducted as close to the end of the year in question as is possible based on data availability from the Copyright Office. In fact, the 1989, 1990 and 1992 surveys were initiated during December of the survey year. In its 1989 Determination, the CRT acknowledged that this was an improvement, but continued to be concerned that respondents would have been unable to recall all of the individual programs they were being asked to value.¹⁹

In 2004 and 2005 (as in several prior years), surveying began in the summer of the year following the subject year. Bortz Media believes that the timing of the recent

¹⁹ Id. at 15,300.

surveys is appropriate in that it allows respondents to consider the value of programming immediately following the period in which it aired. Most important with respect to recall, however, is the recognition that cable system operators (in our experience) do not (and cannot) identify all programs on any particular program service in deciding whether to carry that service and how much to pay for it. Rather, in those marketplace dealings, operators make decisions based on a dominant impression of what is included on the service and its corresponding value. In other words, as in our surveys, marketplace programming decisions are made by cable operators without identifying every individual title. We believe that the respondents to the surveys did have such a dominant impression of the programming on distant signals.

- 5. Signal carriage data. The Tribunal criticized the BBDO surveys for failing to focus respondents on the actual distant signals carried. To address this criticism, the BBC study for 1983 and all subsequent surveys have incorporated actual signal carriage information obtained from Copyright Office Statements of Account.
- 6. Budget allocation process. In its 1983 Determination, the Tribunal raised questions regarding the formulation of the constant sum question and its relationship to tasks actually performed by cable operators. The 1983 constant sum question asked respondents to allocate "value" assuming that the total value of distant signal nonnetwork programming was 100 percent. Bortz Media modified the question in the 1989 study to ask respondents to allocate a programming budget a task closely related to activities operators actually perform.

While the Tribunal acknowledged in its 1989 Determination that this approach was an improvement, there was still concern regarding the short time period allowed for

respondents to consider their allocations in responding to a telephone survey.²⁰ Implicit in this assessment is the notion that further consideration might lead to different responses. As noted before, we believe responses to our survey reflect dominant impressions of programming value formed by respondents in their ongoing decision-making processes regarding programming and that survey results would not be materially different if respondents were given more time to consider their answers.

However, the allocation question for 1992 and all subsequent surveys was modified to ensure that respondents considered the question in a more formal manner. Respondents were first instructed to write down the programming categories and to think about their relative value; they were then asked to write down their estimates for each category. Subsequently, the interviewer reviewed the estimates for each category with the respondent to allow for any changes upon reconsideration.

7. Call backs. In the 1989 proceeding, the MPAA criticized Bortz Media's study on the basis that the repeated call backs which were necessary to obtain completed interviews raised questions as to the validity of the survey responses. The MPAA claimants said that a maximum of three attempts should be made to any one respondent. However, all of the interviews in the 2004 and 2005 studies were completed with a maximum of four direct contacts (including voice mail messages) with the respondent. Other call attempts reflect efforts to identify and/or directly contact the appropriate respondent and are common in executive interviewing.

²⁰ Id. at 15,301.

C. Response to Issues Raised by the CARP

The CARP addressed certain issues related to the Bortz survey methodology in both the 1990-92 and 1998-99 proceedings.

1. Survey length. The 1990-92 CARP expressed concern that respondents were asked to draw conclusions regarding value in the course of a 10 minute survey whereas the CARP itself required a period of six months to answer a similar question. While we understand the issue raised by the 1990-92 CARP, we also must emphasize that respondents to our survey make determinations regarding the relative value of programming on a regular basis. They are experienced and highly knowledgeable regarding the cable industry, the programming that they carry and the interests of their subscribers. We believe that they have a dominant impression of the value of the programming on the distant signals that they carry and that our survey reflects that collective impression.

The 1998-99 CARP shared this view, noting that, while "the interviews are relatively brief," the responding cable operators "are frequently called upon to assess the relative value of alternative types of programming such as news, sports, movies and series when deciding whether to carry a new program service or drop an existing service." Thus, the 1998-99 CARP concluded that this factor did not provide a basis for adjusting the "Bortz share" of any particular claimant group.

2. Supply side. The 1990-92 CARP also observed that the survey does not account for "the 'supply' side of the supply and demand equation in an open market."
This CARP stated that the constant sum question should have asked "what would the

²¹ 1998-99 CARP Report at 19-20.

cable system operator have to and be willing to spend."22 We believe, however, that the survey does reflect the respondents' understanding of the marketplace prices of the different kinds of programming – which is a reflection of the "supply side." The cable system operators surveyed are active in the marketplace for cable programming and are familiar with the rates charged by the sellers of various genres of cable networks.

The 1998-99 CARP acknowledged that the Bortz survey does not directly survey the seller's perspective. However, the CARP concluded that "this does not materially undermine the utility of Bortz, and does not inform us whether any particular claimant group should receive more or less than implied by the Bortz survey."23 Further, the 1998-99 CARP expressed the opinion that "the demand side would more likely determine relative values of programming in an unregulated marketplace."24

In our view, if anything, it is JSC programming that experiences the greatest negative impact from any failure of the survey to take into account the "supply side" of the equation. It is our experience that, as suppliers of programming, JSC members are able to negotiate the highest possible prices for their programming in the open market. Indeed, JSC programming commands an extremely high price relative to other kinds of programming in the open market, where both supplier and customer are present. Based on this marketplace evidence, we believe there is no reason that "supply side" considerations would warrant a reduction in the JSC's award from that shown in the cable operator survey.

 ²² 1990-92 CARP Report at 65.
 ²³ 1998-99 CARP Report at 22.
 ²⁴ Id. at 22.

3. Attitudes versus conduct. The 1990-92 CARP noted that the constant sum question is a measure of "attitudes" rather than "conduct." However, the 1998-99 CARP did not see this as a concern, noting that "uncontroverted testimony and years of research indicate rather conclusively that constant sum methodology, as utilized in the Bortz survey, is highly predictive of actual marketplace behavior."

Moreover, the marketplace value of JSC programming relative to other types of programming is evidence of conduct. When cable systems meet copyright owners in the marketplace – their "conduct" shows that JSC programming is highly valued relative to other types of programming.

4. Value of programming not carried. Addressing an issue raised by PBS, both the 1990-92 and 1998-99 CARPs noted that programming that is not carried may nevertheless have some value to cable operators that is not captured through the Bortz survey methodology. However, both appear to have shared our view that it would not be possible to adjust the survey methodology to address this issue without causing confusion. In addition to causing confusion, we note that it would seem implausible (if not impossible) to determine at what level each "rejected" signal was valued, and how the various programming categories on those signals contributed to establishing that value.

5. Carriage of compensable sports programming. An issue was raised in the 1998-99 proceeding concerning the allocation of value to sports programming in instances where it was unclear that compensable sports programming was carried by a particular cable system's distant signals. In that proceeding, it was determined that one 1999 respondent had allocated value to sports programming even though that system

²⁵ Id. at 21.

may not have carried such programming. In order to correct for this, Bortz Media removed the responses for that system from its calculations – an approach that the CARP found appropriate.²⁶

For 2004 and 2005, Bortz Media conducted an extensive review of the programming carried by distant signals represented on the cable systems responding to our survey to verify that systems allocating value to sports programming actually carried compensable sports programming. Based on this review, we were unable to verify that compensable sports programming was carried by two responding cable systems in 2004, as well as one system in 2005.²⁷

Using the same approach as the CARP accepted in the 1998-99 proceeding, we have tabulated the 2004 and 2005 survey results excluding these respondents. As shown below in Table A-1, the results are nearly identical to those obtained when these respondents are included in the survey.

ld. at 21.

It is possible that some or all of these identified systems did carry compensable sports programming. For example, in one of the instances, we were able to determine that distant signals on the responding cable system consistently carried compensable sports programming in several years other than the year in which this system was included in the survey (2004). However, program listings and other information specific to 2004 were unavailable for the distant signals in question. As such, we could not definitively verify that such programming was carried in 2004.

Table A-1.

	2004	2005
Live professional and college team sports	33.5%	37.0%
Movies	17.8	19.3
Syndicated shows, series and specials	18.7	18.5
News and public affairs programs	18.4	14.6
Devotional and religious programming	7.8	6.6
PBS and all other programming on non-commercial signals	3.5	3.8
All programming on Canadian signals	0.2	0.4
Total*	100.0%	100.0%

6. PBS and Canadian value adjustments. Addressing issues related to public television and Canadian programming, the 1998-99 CARP noted that (as we acknowledged in the 1998-99 proceeding and discuss in Section I of this report) the Bortz survey understated the value of these programming categories by excluding from the survey any systems that carried only public television and/or Canadian signals. In the 1998-99 proceeding, we proposed an adjustment methodology that combined the Bortz survey results for these two categories of programming with the royalty fees generated by the "PBS-only" and "Canadian-only" cable systems that were excluded from the Bortz survey.²⁸

The Panel acknowledged that the Bortz survey was valuable in establishing a "floor" for public television's value, but did not accept the Bortz adjustment proposal for valuing either public television or Canadian programming. In making its public

²⁸ Testimony of James M. Trautman (JSC 04-05 Ex. 4)

television determination, the Panel expressed concern that the Bortz adjustment methodology did not account for the "automatic zero" issue raised by PTV (i.e., the value of public television programming not carried), and also indicated that the proposed adjustments "rel[ied] too heavily on the fee generation methodology." As noted above, we believe that value exists in programming not carried for all programming types at issue in this proceeding, and that no determination can reasonably be made as to which, if any, category is most affected by this issue.

7. WGN Substitution. Finally, the 1998-99 CARP identified the issue of "WGN Substitution" as an issue potentially affecting the value accorded to program suppliers (i.e., the movies and syndicated series categories).³⁰ This is because a substantial portion of the movie and syndicated programming carried by superstation WGN is not compensable – a fact that could not be known by respondents to the Bortz survey. As noted in Section I, this issue also applies to devotional programming on WGN – a significant percentage of which is not compensable.

In our view, this issue suggests that the survey allocations for these categories represent a "ceiling" on the relative value that should be assigned to each when considering the potential impact of substitution.

D. 2004 and 2005 Survey Methodology

1. Questionnaire design. The survey instrument for each year was drafted by Bortz Media, giving consideration to earlier Bortz Media survey instruments and responding to issues raised by the CARP and CRT in prior proceedings. Data as to

30 Id. at 26-28. The CARP did not accept an adjustment proposed by the PTV Claimants to account for this issue. Id. at 26-28.

²⁹ 1998-99 CARP Report at 24. The 1998-99 CARP also did not accept an adjustment methodology proposed on behalf of public television by Dr. William Fairley. *Id.*

carriage of distant signal broadcast stations by cable operators were compiled by Bortz Media from 2004 and 2005 Statements of Account that were filed with the Copyright Office.

The initial survey question screened survey respondents, requiring an affirmation that the respondent was the individual "most responsible for programming decisions" made by the system during the year in question. After qualifying the respondent and identifying the distant signals carried by the respondent's cables system, the interviewer then asked each respondent which types of programming broadcast by its stations were "most popular" with its subscribers. This question was asked on an "unaided" basis – in other words, respondents were not given a list of programming categories from which to choose. Multiple responses were permitted to this question.

The third survey question addressed the use of distant signal programming for advertising and promotional purposes, and was asked in multiple parts. Respondents were first asked if they utilized any distant signal programming in advertising and promotional efforts to attract or retain subscribers. The question referred directly to the distant signal stations identified by the interviewer in the prior question (Q. 2).

Respondents who did use distant signal programming in their marketing efforts were then asked a series of follow-up questions addressing the specific types of programming utilized. They were first asked about usage on an unaided basis; follow-up questions asked specifically about usage of any programming types not mentioned. Only respondents whose systems carried PBS/educational and/or Canadian stations on a distant signal basis were asked about marketing use of these program types.

Finally, respondents were asked which of the program types used in advertising and promotion (including those identified on either an aided or unaided basis) was most important to their marketing efforts.

In the fourth and final survey question, Bortz Media utilized a constant sum approach for estimating cable operators' valuation of the various types of distant signal non-network programming, requiring the respondent to allocate a percentage of a finite pool to each of the program categories.

In order to avoid confusion as to the actual stations and programming under consideration in the survey, each respondent was read a list of the specific distant signal stations actually carried by his or her system. Individual stations were identified for each respondent based on Statements of Account filed with the Copyright Office. The questionnaire design was such that the list of stations was read for the second time during the operator valuation question (it was also read in question 2).

As further clarification, respondents were specifically instructed not to consider any national network programming from ABC, CBS, and NBC (to avoid possible confusion, this instruction was deleted in instances where no network affiliated stations were carried).

Five to seven program categories were used in all four surveys, depending upon whether or not the respondent's cable system carried distant PBS/educational and/or Canadian stations. The categories were:

 Movies broadcast during (survey year) by the U.S. commercial stations listed;

- Live professional and college team sports broadcast during (survey year)
 by the U.S. commercial stations listed;
- Syndicated shows, series and specials distributed to more than one television station and broadcast during (survey year) by the U.S. commercial stations listed;
- News and public affairs programs produced by or for any of the U.S. commercial stations listed, for broadcast during (survey year) only by that station;
- PBS and all other programming broadcast during (survey year) by U.S.
 noncommercial station ______;
- Devotional and religious programming broadcast during (survey year) by the U.S. commercial stations listed; and
- All programming broadcast during (survey year) by Canadian Station

If no PBS or Canadian stations were carried, the operator was not asked to value these program types.

Respondents were asked to estimate the relative value to their systems of these programming categories, thinking in terms of the percentage of a fixed dollar amount they would spend for each programming type.

Program categories were read once so that the respondent had a chance to think about them, and the respondent was instructed to write the categories down. The

program types were then reread to allow the respondent to write down their estimates and provide them to the interviewer. The program types were randomly ordered to prevent ordering bias. The interviewer then reviewed the program categories and estimates with the respondent, providing the respondent an opportunity to revise the estimates if necessary. As discussed previously, both the writing down of categories and responses and the category-by-category review of responses in these surveys reflect changes made in response to comments from the CRT that were incorporated starting with the 1992 survey.

2. Cable system sampling. The cable system operator sampling plans were developed by Bortz Media, based on the design parameters initially developed for previous surveys by Dr. George E. Bardwell, Consultant in Mathematics and Statistics, and Professor of Mathematics and Statistics at the University of Denver. Sample selection was conducted by Bortz Media professional staff.

A stratified random sampling approach was utilized, with the stratification based on copyright royalty payments. As noted above, only Form 3 systems, which contributed approximately 95 percent of the royalties each year, were eligible for inclusion in the sample. Royalty data were obtained from Statements of Account filed with the Copyright Office. The sampling plans were constructed so that proportionately more systems with large royalty payments were sampled relative to systems with small royalty payments. This approach is intended to ensure that responses to the survey would provide a statistically valid predictor for allocation of royalty payments.

The sample design included four strata of royalty classes, one of which (largest royalty payers) required that all systems within that stratum be included in the sample.

The boundaries of the remaining three strata were constructed using the 'cum square

root of f rule' applied to a frequency distribution of royalty payments in \$500 increments. This rule gives reasonable assurance the calculated stratum boundaries are maximally effective in reducing the sampling error for a given sample size. Neyman's allocation formulas provide an optimum allocation of the total samples to each stratum so as to achieve minimum sampling error in the overall survey estimates.

The required stratification and certain associated statistics for each study are summarized in Table A-2 below.

Table A-2. Stratification Statistics for 2004 and 2005 Surveys*

	Number		Percent of	Royalty	Original	Final
	of	Mean	Total	Standard	Sample	Eligible
Royalty Stratum	Systems	Royalty	Royalties	Deviation	Size**	Sample
			2004			
\$0 - 20,628	936	\$10,104	14.4%	\$4,772	65	53
\$20,629 - 59,628	432	35,897	23.5	10,873	68	54
\$59,629 - 207,129	234	103,077	36.6	37,199	129	109
\$207,130 or more	45	373,148	25.5	253,603	45	35
Total/Average	1,647		100.0%		307	251
			2005			
\$0 - 23,844	755	\$12,269	14.3%	\$5,150	58	46
\$23,845 - 65,344	378	39,639	23.1	11,372	64	56
\$65,345 - 239,844	210	114,824	37.2	44,527	140	118
\$239,845 or more	39	420,366	25.3	202,246	<u>39</u>	31
Total/Average	1,382		100.0%		301	251

^{*}Stratification statistics are based on the first reporting period of each year.

Sample systems were randomly selected from each stratum in accordance with the sample size requirements given in the foregoing table and using randomly selected starts.

^{**}Includes all sampled systems. In 2004, 43 systems not carrying distant signals, nine systems carrying only PBS signals, and one carrying only Canadian signals were discarded. In addition, two systems could not be located at the Copyright Office and one system was determined to be a duplicate. In 2005, 39 systems not carrying distant signals, seven carrying only PBS signals, two carrying only PBS and Canadian signals, and one carrying only Canadian signals were discarded. In addition, one system could not be located at the Copyright Office.

In both 2004 and 2005, a number of the systems selected within the initial sample frame reported above carried no distant signals. As discussed above at page 32, these systems were ineligible, since there was no set of signals/programming that would form the necessary basis upon which to conduct the survey among these systems. Similarly, some systems sampled carried only a distant PBS and/or only a distant Canadian signal. As discussed above on page 32, these systems were also excluded.

3. Survey. Telephone surveying in the 2004 and 2005 studies was completed by Ted Heiman & Associates (THA). James M. Trautman, Managing Director, and Brian Broderick, Senior Vice President, of Bortz Media oversaw selection and training of interviewers. Only interviewers specializing in surveying professional and managerial personnel were utilized. Supervisors listened to interviews over the initial phases of the studies to ensure that interviewers understood the subject matter, were communicating properly with survey respondents and were accurately recording the information supplied by the respondents.

Dates during which surveys were completed are as follows.

Study Year	Survey Period
2004	7/28/05-9/23/05
2005	7/23/06-11/20/06

Calls were placed between 8:30 a.m. and 4:30 p.m. Central Standard Time. Interviewers were instructed to call back as often as necessary to obtain a completed interview or refusal. While up to 30 calls were made to some systems, virtually every completed interview required only one or two direct contacts with the eventual respondent.

Interviewers were not told the name of the client or given any information, other than that on the survey form, regarding the nature of the study.

4. Survey completion. Interviews were completed with between 65 and 68 percent of cable systems included in the sample frame provided to THA:

	Eligible Sample	Surveys Completed	Response Rate to Q4
2004	251	162	64.5%
2005	251	171	68.1

5. Respondent qualifications. In contacting cable systems, interviewers were instructed to ask first for the system general manager and to confirm that the manager was the person at the system "most responsible for programming decisions made" by the system. If the general manager did not fit the description, the interviewer was instructed to ask for the person who was most responsible for programming decisions. In all cases, the eventual survey respondent, whether or not the system manager, was required to answer affirmatively the qualifying question. As indicated in Table A-3, respondents were overwhelmingly individuals with general management, marketing or programming responsibilities.

Table A-3.

Persons Most Responsible for Programming Decisions,
By Job Title, 2004 and 2005

	2004	2004		5
4.4	Number of	Percent	Number of	Percen
Job Title	Respondents	of Total	Respondents	of Total
SVP, Regl. VP or VP Marketing/Marketing Director General Manager/Manager/Area VP or	62	38.3%	47	27.5%
Director/Regional VP or SVP	40	24.7	71	41.5
Marketing Manager/Marketing Operations Dir./Marketing Coordinator/Regl. Mktg. Mgr. VP or Dir. Sales & Marketing/Regl. Dir. Sales &	17	10.5	17	9.9
Marketing	17	10.5	11	6.4
VP, Director or Manager Operations/Regl. VP or Director Operations	10	6.2	5	2.9
Product or Programming Director or Manager	9	5.6	7	4.1
VP or SVP	5	3.1	7	4.1
Other	2	1.2	6	3.5
Total*	162	100.1%	171	100.1%

6. Estimation procedures. In both studies, two different methodologies were used in making estimates for all systems based on the sample responses. For question 4 (valuation by program type), a ratio estimation methodology was used. This methodology weights responses by another variable. In this case, the responses (valuation of each type of programming) were weighted by the total royalty that the respondent's system had paid for the first reporting period of 2004 or 2005. Larger systems with greater royalty payments were given a greater weight compared with smaller systems in determining the average value of each type of programming. For the sample systems, the total royalty and percent of value by program type was known. For all other systems not in the sample, total royalties were also known. Statistically, knowledge of royalties for the total universe of systems improves the reliability of the estimates by reducing the uncertainty in this component of the estimation methodology.

For questions 2 and 3, the focus was not on value but rather on subscriber and advertising preference. In this case, there was no other supplemental variable available which related to preference for all systems, including those not in the sample. Therefore, the ratio estimation methodology did not apply to making estimates based on responses to these questions and a more straightforward method was applied in which all sample stations carried an equal weight after accounting for different sample sizes by strata. Formulas for calculating these statistics are set forth below.

a. Statistical estimation procedures for question 4. The following sets forth the mathematical and statistical basis for the valuation estimates obtained for the key constant sum question:

51

Let h = stratum index,

- p_{ih} = <u>proportionate</u> value of program type x estimated by <u>sample system</u> i in stratum h from questionnaire,
- t_{ih} = total royalty of <u>sample system</u> i in stratum h.
- T_h = total royalty of <u>all</u> (sample and nonsample) systems in stratum h,
- $x_{ih} = p_{ih} t_{ih} = \underline{\text{value}}$ of program type x to system i in stratum h,
- n_h = number of <u>sample systems</u> responding in stratum h,
- N_h = total number of systems in stratum h,

$$T_{x} = \sum_{h=l}^{4} \frac{\sum\limits_{i=1}^{n_{h}} x_{ih}}{\sum\limits_{i=1}^{n_{h}} t_{ih}} T_{h}$$

$$s_{xh}^2 = \sum_{\substack{n_h \\ \sum_{i} x_{ih}^2 - \frac{\left(\sum_{i}^{n_h} x_{ih}\right)^2}{n_h}} / n_h$$

$$s_{th}^2 = \sum_{i=1}^{n_k} t_{ih}^2 - \frac{\left(\sum_{i=1}^{n_k} t_{ih}\right)^2}{n_h} / n_h$$

$$R_h = \sum_{\substack{1 \\ \sum_{i} t_{ih}}}^{n_h} x_{ih}$$

$$r_h = \frac{n_b \sum_{i=1}^{n_b} x_{ib} t_{ib} - \sum_{i=1}^{n_b} x_{ib} \sum_{i=1}^{n_b} t_{ib}}{n_b^2 s_{ib} s_{ib}}$$

$$V(T_x) = \sum_{i=1}^{4} \frac{N_h}{n_h - 1} (N_h - n_h) (s_{ih}^2 + s_{ih}^2 R_h^2 - 2R_h r_h s_{ih} s_{ih})$$

- estimated total value of program type x,
- sample variance of value of program type x in stratum h,
- sample variance of royalty in stratum h,
- ratio estimate of proportionate value of program type x for stratum h,
 - Pearson's correlation
- coefficient between x_h and t_h in stratum h,
- variance of estimate of total value of program x.
- b. Statistical estimation procedures for questions 2 and 3. The following sets forth the mathematical and statistical basis for the estimates obtained for questions 2 and 3.

Let h = stratum index,

n_h = number of <u>sample systems</u> responding in stratum h,

N_h = total number of systems in stratum h,

N = total systems in sample frame,

t_{xh} = total <u>number of positive answers</u> for given cell for question x in stratum h,

 $p_{xh} = t_{xh}/n_h$ = estimated <u>proportion of positive answers</u> for given cell for question x in stratum h,

$$V(P_x) = \frac{1}{N^2} \sum_{h=1}^{4} \frac{N_h}{n_h - 1} (N_h - n_h) p_{xh} (1 - p_{xh}) = \text{variance of estimated proportion } P_x$$

7. Evaluation of survey estimates. The 95 percent confidence intervals for the estimates included in this report for the years 2004 and 2005 are set forth below.

2004

Question 4. Cable Operator Allocation of Distant Signal Program Budget

Category	Percent Allocation	Absolute Confidence Interval
Live professional and college team sports	33.5%	±2.3
Syndicated shows, series and specials	18.7	2.2
News and public affairs	18.4	1.7
Movies	17.8	1.3
Devotional and religious	7.8	0.7
PBS and all other non-commercial	3.5	0.9
Canadian	0.2	0.2
Total	100.0%*	

^{*}Column does not add to total due to rounding

Question 2. Distant Programming Popularity Among Subscribers

Category	Percent Allocation*	Absolute Confidence Interval
Live professional and college team sports	75.7%	±8.6
Syndicated shows, series and specials	29.1	9.1
News and public affairs	28.9	9.4
Movies	20.4	7.9
PBS and all other non-commercial	13.2	7.1
Devotional and religious	0.9	1.4
Canadian	0.0	0.0
Other	0.2	0.4

*Multiple responses are allowed to this question.

Question 3a. Use of Distant Signal Programming for Advertising/ Promotional

	Purposes	
Carlo Carlo	Percent	Absolute Confidence
Category	Allocation	Interval
Yes	11.1%	±6.3
No	88.9	
Total	100.0%	

Question 3b/3c. Combined Aided/Unaided Advertising/Promotional Use of Distant Signal Programming by Type

Category	Percent Allocation	Absolute Confidence Interval
Live professional and college team sports	75.6%	NA
News and public affairs	58.7	NA
Syndicated shows, series and specials	27.3	NA
Movies	12.2	NA
PBS and all other non-commercial	7.4	NA
Devotional and religious	0.0	NA
Canadian	0.0	NA
Other	0.0	NA

*Multiple responses are allowed to this question.

Question 3d. Most Important Distant Signal Programming for Advertising/Promotional Purposes

Category	Percent Allocation	Absolute Confidence Interval
Live professional and college team sports	50.2%	NA
Syndicated shows, series and specials	21.7	NA
News and public affairs	17.6	NA
Movies	5.6	NA
PBS and all other non-commercial	1.9	NA
Devotional and religious	0.0	NA
Canadian	0.0	NA
Other	0.0	NA
Don't know/no response	<u>3.1</u>	NA
Total	100.0%*	

^{*}Column does not add to total due to rounding.

2005

Question 4. Cable Operator Allocation of Distant Signal Program Budget

Category	Percent Allocation	Absolute Confidence Interval
Live professional and college team sports	36.9%	±2.5
Movies	19.2	1.8
Syndicated shows, series and specials	18.4	2.1
News and public affairs	14.8	1.7
Devotional and religious	6.6	0.8
PBS and all other non-commercial	3.7	0.9
Canadian	0.3	0.2
Total	100.0%*	

^{*}Column does not add to total due to rounding

Question 2. Distant Programming Popularity Among Subscribers

Category	Percent Allocation	Absolute Confidence Interval
Live professional and college team sports	65.7%	±10.5
Syndicated shows, series and specials	35.6	10.5
Movies	28.7	10.0
News and public affairs	19.0	8.2
PBS and all other non-commercial	5.2	5.2
Devotional and religious	3.4	4.0
Canadian	0.4	0.4
Other	0.0	0.0

^{*}Multiple responses are allowed to this question.

Question 3a. Use of Distant Signal Programming for Advertising/ Promotional

	Purposes	
	Percent	Absolute Confidence
Category	Allocation	Interval
Yes	4.9%	±4.1
No	<u>95.1</u>	
Total	100.0%	

Question 3b/3c. Combined Aided/Unaided Advertising/Promotional Use of Distant Signal Programming by Type

Category	Percent Allocation	Absolute Confidence Interval
Live professional and college team sports	96.1%	NA
Movies	80.5	NA
Syndicated shows, series and specials	62.2	NA
News and public affairs	62.2	NA
PBS and all other non-commercial	55.7	NA
Canadian	3.9	NA
Devotional and religious	0.0	NA
Other	2.6	NA

*Multiple responses are allowed to this question.

Question 3d. Most Important Distant Signal Programming for Advertising/Promotional Purposes

Category	Percent Allocation	Absolute Confidence Interval
News and public affairs	45.2%	NA
Live professional and college team sports	44.4	NA
Movies	2.6	NA
Syndicated shows, series and specials	0.0	NA
PBS and all other non-commercial	0.0	NA
Devotional and religious	0.0	NA
Canadian	0.0	NA
Other	7.8	NA
Total	100.0%	

APPENDIX B. SURVEY INSTRUMENTS

Version H

2004 SYSTEM OPERATOR PROGRAMMING QUESTIONNAIRE

VERSION H

Contain Name		
System Name:		
City / State:		
Subscribers:		Remit Number
Respondent's Name:		
Position:		
Telephone Number:		
Date:		
Interviewer:		
RESPONSIBLE FOR PROG	RAMMING DECISIONS.)	PERSON AT THE SYSTEM MOST
short national survey of	from among randomly selecte v. I only have a few questi	
Are you the person at made by your system du		sible for programming decisions
Yes	1	
No	MOST RESPONSIBLE FO	

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2a. Industry data indicate that during 2004 your system carried the following broad-

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Com/ Non/ Call Letters	Can	<u>Affil</u>	City	INSERT DISTANT SIGNAL CALL LETTERS, CITY AND AFFILIATION
other than an	y national r ost popular v	network p with your	orogramn subscribe	ramming broadcast by these stations, ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than and think were mo PROGRAMMIN	y national r ost popular v IG TYPES ME	network p with your NTIONED	orogramn subscribe	ning from ABC, CBS and NBC, do you
other than and think were mo PROGRAMMIN Movies	y national r ost popular v IG TYPES ME	network p with your NTIONED	programn subscribe	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than any think were mo PROGRAMMIN Movies	y national rost popular v IG TYPES ME	network p with your NTIONED	subscribe	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than any think were mo PROGRAMMIN Movies	y national rost popular voids TYPES ME	network p with your NTIONED ege team and spec	subscribe subscribe sports	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than any think were mo PROGRAMMIN Movies	y national rost popular votes to popular votes ME all and colletows, series a polic affairs pro	network p with your NTIONED ege team and spec ograms .	subscribe subscribe	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than any think were mo PROGRAMMIN Movies	y national rost popular voids TYPES ME and colle ows, series a plic affairs proper programmer progr	network p with your NTIONED ege team and spec ograms , ming bro	subscribe subscribe sports	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than any think were mo PROGRAMMIN Movies	y national rest popular value of the popular value of the popular value of the programmer programmed religious programmed religious programmed religious programmed programmed religious programmed re	network p with your NTIONED ege team and spect ograms . ming bro	subscribe subscribe sports ials	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL

			- 1	
Ve	rs	01	7	н

3a.	Did you feature any programming broadcast by the stations I mentioned, other
	than any national network programming from ABC, CBS and NBC, in your 2004
	advertising and promotional efforts to attract and retain subscribers or not?

Yes	1	
No	2	GO TO Q.4

3b. What types of programming broadcast by these stations did you feature in your 2004 subscriber acquisition and retention advertising and promotion? (DO NOT READ LIST--RECORD BELOW UNDER Q.3b, "UNAIDED")

(FOR EACH TYPE OF PROGRAMMING NOT MENTIONED IN Q.3b, ASK:)

- 3c. Did you also feature (INSERT EACH PROGRAMMING TYPE NOT MENTIONED) broadcast by these stations in your 2004 advertising and promotion to attract and retain subscribers or not? (RECORD BELOW UNDER Q.3c, "AIDED")
- 3d. You said you used (READ ALL PROGRAMMING TYPES CHECKED IN Q.3b or 3c) from the stations I mentioned in 2004 subscription and retention advertising and promotion. Which of these do you feel was the most important programming type to feature in subscriber acquisition and retention advertising and promotion? Which was the next most important programming type? Which programming type was least important? (RECORD BELOW UNDER Q.3d, "IMPORTANT" IN APPROPRIATE COLUMN. IF TWO OR FEWER WERE MENTIONED, MODIFY QUESTION ACCORD-INGLY)

Ro	ando	m	Q.3b.	Q.3c.	In	Q.3d. nportant	
Se	eq.		<u>Unaided</u>	<u>Aided</u>	Most	2nd	Least
()	Movies	1	1	1	1	1
()	Live professional and college team sports	2	2	2	2	2
1)	Syndicated shows, series and specia	ls 3	3	3	3	3
1)	News and public affairs programs	4	4	4	4	4
()	PBS and all other programming broadcast by noncommercial station	5	5	5	5	5
()	Devotional/religious programming	6	6	6	6	6
1)	All programming broadcast by Canadian station	7	7	7	7	7
		Other (SPECIFY BELOW)			1.2	1.50	2
			8	8	8	8	8
			9	9	9	9	9
			10	10	10	10	10

4a	ty of ho or	ow, I would like you to estimate the <u>relative</u> value to your cable system of each pe of programming actually broadcast by the stations I mentioned during 2004, ther than any national network programming from ABC, CBS and NBC. That is, ow much do you think each such type of programming was worth, if anything, in a comparative basis, in terms of attracting and retaining subscribers. We are all interested in U.S. commercial station(s)
	FIF	hat percentage, if any, of the fixed dollar amount would you spend on (READ RST PROGRAM TYPE)? And what percentage, if any, would you spend on (READ EXT PROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.)
	ndo	
()	Movies broadcast during 2004 by the U.S. commercial stations I listed
()	Live professional and college team sports broadcast during 2004 by the U.S. commercial stations I listed
()	Syndicated shows, series and specials distributed to more than one television station and broadcast during 2004 by the U.S. commercial stations I listed.
()	News and public affairs programs produced by or for any of the U.S. commercial stations I listed, for broadcast during 2004 only by that station
()	PBS and all other programming broadcast during 2004 by U.S. noncommercial station
()	Devotional and religious programming broadcast during 2004 by the U.S. commercial stations I listed.
()	All programming broadcast during 2004 by Canadian station

PERCENTAGES MUST ADD TO 100 PERCENT; PROMPT RESPONDENT IF THEY DO NOT.

4b. Now I'm going to read back the categories and your estimates. (REREAD CATEGORIES AND RESPONSES IN RANDOM SEQUENCE ORDER TO ALLOW RESPONDENT TO REVIEW THE ESTIMATES.)

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Are there any changes you would like to make? (RECORD ANY CHANGES BY CROSSING OUT ORIGINAL RESPONSE AND WRITING IN REVISED RESPONSE NEXT TO IT. PERCENTAGES MUST STILL ADD TO 100 PERCENT; PROMPT RESPONDENT IF THEY DO NOT.)

Thank you for your time and cooperation.

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2005 SYSTEM OPERATOR PROGRAMMING QUESTIONNAIRE

VERSION H

System Name:		
City / State:		
Subscribers:		Remit Number
Respondent's Name:		
Position:		
Telephone Number:		
Date:		
Interviewer:		
RESPONSIBLE FOR PROG Hello, I'm	RAMMING DECISIONS.) from	We are conducting a
programming they carry		cted cable systems regarding the estions.
Are you the person at made by your system do		onsible for programming decisions
Yes No		H PERSON AT THE SYSTEM
		FOR PROGRAMMING TINTRODUCTION AND Q.1.

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Com/ Non/ Call Letters	Can	Affil	City	INSERT DISTANT SIGNAL CALL LETTERS, CITY AND AFFILIATION
Annual Control		0.34.34.34		and one in the state of the sta
other than ar think were mo PROGRAMMIN	ny national i ost popular NG TYPES ME	network with you ENTIONED	programr subscrib	ramming broadcast by these stations, ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than ar think were mo PROGRAMMIN Movies	ny national i ost popular NG TYPES ME	network with you ENTIONED	programr subscrib	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than are think were modern programming. Movies	ny national i ost popular NG TYPES ME	network with you ENTIONED	programr r subscrib)) n sports	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than are think were modern programmer. Movies	ny national in post popular NG TYPES ME mal and colle	network p with you ENTIONED ege team and spec	programr r subscrib)) n sports ials	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than are think were modern than the think were modern that the think were modern than the think were modern the think were modern than the think were modern the think w	ny national rost popular NG TYPES ME nal and colle nows, series collections	network pour with your ENTIONED ege team and spec rograms	programr r subscrib)) n sports ials	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than are think were modern programmer. Programmer Movies	ny national rost popular NG TYPES ME nal and colle nows, series a polic affairs program	network pour with your ENTIONED ege team and spec rograms aming bro	programr r subscrib)) n sports ials	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than an think were modern think were moder	ny national in post popular NG TYPES ME nal and colle nows, series on the program and religious part of the program and the pr	network points and spectrograms arongrams	programr r subscrib n sports ials	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL
other than and think were modern think were mode	ny national in post popular NG TYPES ME nal and collections, series of the programmed religious pring broadco	network points and spectrograms are programs are programs are programs are programn ast by Ca	orogramr r subscrib n sports ials padcast b ning	ning from ABC, CBS and NBC, do you ers? (DO NOT READ LIST; RECORD ALL

3a.	Did you feature any programming broadcast by the stations I mentioned, other
	than any national network programming from ABC, CBS and NBC, in your 2005
	advertising and promotional efforts to attract and retain subscribers or not?

Yes	 1	
No	 2	GO TO Q.4

3b. What types of programming broadcast by these stations did you feature in your 2005 subscriber acquisition and retention advertising and promotion? (DO NOT READ LIST--RECORD BELOW UNDER Q.3b, "UNAIDED")

(FOR EACH TYPE OF PROGRAMMING NOT MENTIONED IN Q.3b, ASK:)

- 3c. Did you also feature (INSERT EACH PROGRAMMING TYPE NOT MENTIONED) broadcast by these stations in your 2005 advertising and promotion to attract and retain subscribers or not? (RECORD BELOW UNDER Q.3c, "AIDED")
- 3d. You said you used (READ ALL PROGRAMMING TYPES CHECKED IN Q.3b or 3c) from the stations I mentioned in 2005 subscription and retention advertising and promotion. Which of these do you feel was the most important programming type to feature in subscriber acquisition and retention advertising and promotion? Which was the next most important programming type? Which programming type was least important? (RECORD BELOW UNDER Q.3d, "IMPORTANT" IN APPROPRIATE COLUMN. IF TWO OR FEWER WERE MENTIONED, MODIFY QUESTION ACCORDINGLY)

R	andor	m	Q.3b.	Q.3c.		Q.3d.	
Se	eq.		Unaided	<u>Aided</u>	Most	2nd	Least
()	Movies	1	1	1	1	1
()	Live professional and college team sports	2	2	2	2	2
()	Syndicated shows, series and specia	ls 3	3	3	3	3
1)	News and public affairs programs	4	4	4	4	4
1)	PBS and all other programming broadcast by noncommercial station	5	5	5	5	5
1)	Devotional/religious programming	6	6	6	6	6
1)	All programming broadcast by Canadian station	7	7	7	7	7
		Other (SPECIFY BELOW)					
			8	8	8	8	8
			9	9	9	9	9
			10	10	10	10	10

4a.	hov on only	w, I would like you to estimate the <u>relative</u> value to your cable system of each e of programming actually broadcast by the stations I mentioned during 2005, er than any national network programming from ABC, CBS and NBC. That is, w much do you think each such type of programming was worth, if anything, a comparative basis, in terms of attracting and retaining subscribers. We are y interested in U.S. commercial station(s)
	the Assi gra per pro	ead all the program types that were broadcast by these stations to give you a cance to think about them; please write the categories down as I am reading m. (READ PROGRAM TYPES IN ORDER OF RANDOM SEQUENCE NUMBER.) ume you had a fixed dollar amount to spend in order to acquire all the promming actually broadcast during 2005 by the stations I listed. What centage, if any, of the fixed dollar amount would you spend for each type of orgamming? Please write down your estimates, and make sure they add to 100 reent.
	Mh	at paraentage if any of the fixed dellar amount would you spend on (DEAD
	FIRS	at percentage, if any, of the fixed dollar amount would you spend on (READ ST PROGRAM TYPE)? And what percentage, if any, would you spend on (READ KT PROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.)
	FIRS	ST PROGRAM TYPE)? And what percentage, if any, would you spend on (READ KT PROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.)
	FIRS NEX	ST PROGRAM TYPE)? And what percentage, if any, would you spend on (READ KT PROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.)
	FIRS NEX	ST PROGRAM TYPE)? And what percentage, if any, would you spend on (READ KT PROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	FIRS NEX ndom quenc	ST PROGRAM TYPE)? And what percentage, if any, would you spend on (READ KT PROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.) Delection of the complete stations of the comple
	FIRS NEX ndom quenc	TPROGRAM TYPE)? And what percentage, if any, would you spend on (READ (T PROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.) Movies broadcast during 2005 by the U.S. commercial stations I listed. Live professional and college team sports broadcast during 2005 by the U.S. commercial stations I listed. Syndicated shows, series and specials distributed to more than one television station and broadcast during 2005 by the U.S. commercial
	FIRS NEX ndom quenc	TPROGRAM TYPE)? And what percentage, if any, would you spend on (READ (T PROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.) Movies broadcast during 2005 by the U.S. commercial stations I listed. Live professional and college team sports broadcast during 2005 by the U.S. commercial stations I listed. Syndicated shows, series and specials distributed to more than one television station and broadcast during 2005 by the U.S. commercial stations I listed. News and public affairs programs produced by or for any of the U.S.
	FIRS NEX ndom quenc	And what percentage, if any, would you spend on (READ READ READ READ READ READ READ READ
	FIRS NEX ndom quenc	ST PROGRAM TYPE)? And what percentage, if any, would you spend on (READ TYPE)ROGRAM TYPE)? (COMPLETE LIST IN THIS MANNER.) Movies broadcast during 2005 by the U.S. commercial stations I listed. Live professional and college team sports broadcast during 2005 by the U.S. commercial stations I listed. Syndicated shows, series and specials distributed to more than one television station and broadcast during 2005 by the U.S. commercial stations I listed. News and public affairs programs produced by or for any of the U.S. commercial stations I listed, for broadcast during 2005 only by that station. PBS and all other programming broadcast during 2005 by U.S. noncommercial station

4b. Now I'm going to read back the categories and your estimates. (REREAD CATEGORIES AND RESPONSES IN RANDOM SEQUENCE ORDER TO ALLOW RESPONDENT TO REVIEW THE ESTIMATES.)

Version H

Are there any changes you would like to make? (RECORD ANY CHANGES BY CROSSING OUT ORIGINAL RESPONSE AND WRITING IN REVISED RESPONSE NEXT TO IT. PERCENTAGES MUST STILL ADD TO 100 PERCENT; PROMPT RESPONDENT IF THEY DO NOT.)

Thank you for your fime and cooperation.



TESTIMONY OF JUNE TRAVIS

My name is June Travis. I am submitting this testimony on behalf of the Joint Sports Claimants (JSC) in the Copyright Arbitration Royalty Panel (CARP) proceeding to distribute the 1998 and 1999 cable television compulsory licensing royalties.

QUALIFICATIONS

For thirty years, beginning in 1969, I worked in the cable television industry. From 1994 to 1999, I was Executive Vice President and Chief Operating Officer of the National Cable Television Association (NCTA). During my tenure at the NCTA, our membership consisted of cable operators serving over 90% of the cable-subscribing households in the United States and over 100 nationally-distributed cable programming networks and hardware suppliers.

As Executive Vice President and Chief Operating Officer of the NCTA, I helped manage the development and implementation of NCTA's public policy strategies and initiatives. One of my principal responsibilities was to help produce an internal consensus among NCTA members on the myriad of issues that faced the cable industry. In that regard, I had frequent contacts with the senior executives of virtually all of the mid-sized and major Multi-System Operators (MSO's). In my contacts with the cable industry executives, I discussed many of the concerns they had in terms of serving their customers by providing the best programming possible while maximizing their return on investment. Accordingly, I am familiar with the regulatory and marketplace

issues that affected the cable industry, including the programming available on distant signals, the market for various kinds of programming networks, and the increased competition caused by the introduction and rapid expansion of Direct Broadcast Satellite ("DBS").

Prior to joining the NCTA, I was President and Chief Operating Officer of Rifkin & Associates (R&A), a Denver-based cable television operator. In that capacity, I was responsible for the operational and financial performance of cable systems in thirteen states, serving nearly 500,000 customers. While I was at R&A, I also served on the NCTA Board of Directors. During my tenure as an NCTA board member and officer, I was involved with the issues surrounding the passage of the 1992 Cable Act, as well as the issues involved with the implementation of that law.

Before joining R&A, I held several executive positions at American Television and Communications Corporation, the predecessor company to Time Warner Cable, which is now AOL-Time/Warner. At the time I was employed by ATC, ATC was the second largest MSO. I currently work with a private family foundation and serve on several boards of directors, mostly of non-profit organizations.

DISCUSSION

I understand that the purpose of this proceeding is to determine the relative market values of the different types of non-network programming on distant signals during the years 1998 and 1999. I further understand that

surveys of cable operators, conducted by Bortz Media, show that JSC programming (live professional and collegiate team sports) was the most valuable type of distant signal programming in 1998 and 1999 – followed in order by movies, syndicated series, news and public affairs, religious programming, non-commercial programming and Canadian programming. My testimony is intended to help explain why the cable industry has valued the sports programming on distant signals more highly than other distant signal programming.

The importance that the industry has attached to distant signal sports programming is reflected in the industry's support for the compulsory license itself. Retention of the cable compulsory license has been an important policy objective of the NCTA for many years. The principal concern underlying that objective has been to ensure access to sports programming on distant signals. If distant signals did not offer major sports programming, the cable industry would not likely consider it politically worthwhile to maintain the compulsory license for distant signals.

Unlike much of the other programming available on distant signals, live sports programming is unique – no game can be substituted for another. This uniqueness makes sports programming very valuable to cable systems. By adding a distant signal which carries sports programming, a cable system is able to offer customers something that is generally not available elsewhere, thereby broadening the appeal of the cable system's channel lineup.

In addition, the sports programming on distant signals appeals to a very loyal and vocal set of cable customers. Sports fans are intensely loyal to their teams and sports and, thus, place considerable value on having access to those teams and sports. This loyalty resonates with cable operators. The deletion of a distant signal with sports programming from a local cable system's lineup will invariably create a great deal of outrage. Cable operators react strongly to customers' opinions when signals are added or dropped because those customers who complain are often willing to drop their cable service, especially given the advent of DBS as a competitive alternative. Moreover, since many cable systems are still regulated by local franchising authorities, the outrage generated by deletion of a popular sports station is also more likely to create the possibility that such a change will cause regulatory trouble for the system through the actions of motivated sports fans.

Sports programming was particularly valuable relative to other types of programming at the end of the 1990's, the time period covered by the Bortz Media surveys of cable operators. There are two reasons for this:

- increased competition from DBS services such as DirecTV and EchoStar; and,
- the increase in the overall number of cable networks which provide programming alternatives.

One of the most important changes in the cable industry during the 1990's was the launch and growth of the DBS industry. Before the launch of the first

DBS service (PrimeStar) in 1991, consumers who wanted multi-channel programming but who did not want or were not able to subscribe to cable service were required to purchase a rather large and expensive dish (known as a "C-Band" dish) to pick up programming networks and superstations. The C-Band dishes were not a practical option for most consumers and, thus, remained as only a minor competitor to cable providers. DBS service, on the other hand, is a satellite service provided directly to customer by means of a small and relatively inexpensive (or, in the case of EchoStar, free) satellite dish. The consumers who obtain these dishes purchase a package of channels from a DBS service. The inexpensive nature of DBS dishes and convenience of having programming packages have made DBS a real competitive alternative to cable for many consumers.

To make inroads into cable's established customer base, DBS providers have placed a special emphasis on appealing to cable customers who wanted access to sports programming – especially the sports programming represented by the JSC in this proceeding. Like cable operators, DBS providers have been acutely aware that sports fans are intensely loyal and are willing to spend to gain access to the games they want to watch. Accordingly, DBS's marketing and programming efforts have been directed at appealing to sports fans, who are more likely to switch to DBS based upon the availability of their favorite sports programming.

Cable operators are aware of the efforts made by DBS providers to appeal to sports fans. Accordingly, under pressure from these efforts (and the substantial growth in the number of DBS subscribers as a result of the efforts), cable operators not surprisingly placed a higher premium on obtaining sports programming following the growth of DBS. Simply put, to compete with satellite carriers, cable systems needed as much sports programming as possible. In this way, the unique sports programming shown on relatively inexpensive distant signals would have become more valuable to cable operators at the end of the 1990s than at the beginning of that decade. This distant signal sports programming would have substantial value in retaining customers who might otherwise switch to DBS.

On the other side of the coin, the other types of programming on distant signals would have become less valuable to cable operators due to the increase in the number of programming networks overall. In the 1990's, the number of cable networks focusing on a variety of different types of programming increased greatly. The value of similar, duplicative programming on distant signals would have been diluted by the availability of these new networks.

¹ As a general matter, distant signals became less costly after the 1992 Cable Act, which re-introduced rate regulation and forced cable systems to create a lower-priced tier of service that included all broadcast signals (with the exception of superstations). The introduction of a lower priced tier generally meant the reduction of copyright fees, which are paid based on the tier of service that includes broadcast signals. The 1992 Cable Act was generally supported by broadcasters, who were interested in both obtaining the widest carriage possible on the lowest price tier and slowing the growth of cable as a competitive alternative.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

June Travis

Commune 27, 2002

Date

Before the COPYRIGHT ROYALTY JUDGES Washington, D.C.

In re)	
)	
DISTRIBUTION OF CABLE)	NO. 14-CRB-0010-CD (2010-13
ROYALTY FUNDS)	
)	

Written Rebuttal Testimony of

DR. WILLIAM E. WECKER AND R. GARRISON HARVEY

September 15, 2017

I. QUALIFICATIONS

Dr. William E. Wecker

I am a statistician and applied mathematician. I received the Bachelor of Science degree (Basic Sciences) from the United States Air Force Academy. I received both the Master of Science degree (Operations Research) and Doctor of Philosophy degree (Statistics and Management Science) from the University of Michigan. I have served on the faculties of the University of Chicago, the University of California, Davis, and Stanford University where I taught statistics and applied mathematics at the graduate level. I have performed research in statistical theory, statistical methods, and applied mathematics for over four decades.

I am currently President of William E. Wecker Associates, Inc., an applied mathematics consulting firm located in Jackson, Wyoming. I am a member of the American Statistical Association, the Institute of Mathematical Statistics, and the Society for Risk Analysis. I have served as associate editor of the Journal of the American Statistical Association for four years and of the Journal of Business and Economic Statistics for eighteen years. A copy of my curriculum vitae is attached in Appendix A.

R. Garrison Harvey

I am a statistician and applied mathematician. I received the Bachelor of Science degree (Applied Mathematics) from the United States Air Force Academy and the Master of Science degree (Operations Research) from the Air Force Institute of Technology. I am currently Vice President and Principal Consultant at William E. Wecker Associates, Inc. I devote much of my practice to understanding and evaluating complex datasets and performing complex statistical analyses, including multiple regressions. I have served as an expert witness in litigation and arbitration in matters evaluating damages, breach of contract, copyright infringement, consumer

product performance, epidemiology, sample design, credit card market analysis and profitability, statistical analysis of credit card industry data, and class certification. Additionally, I have worked as a consultant on many litigations and business consulting engagements including: antitrust matters involving price-fixing; false advertising; unfair competition and monopolization; consumer product safety and performance; environmental damage; class actions alleging disparate impact in insurance; insurance claims; lending and wages; patent and intellectual property matters involving pharmaceutical drugs, petrochemical formulation, and automobile devices. These qualifications and a list of my professional publications are in my curriculum vitae attached as Appendix B.

II. Purpose of Testimony and Conclusions

The Joint Sports Claimants requested William E. Wecker Associates, Inc. to review the Corrected Testimony of Jeffrey S. Gray, Ph.D., which he submitted in this proceeding on April 3, 2017. Our objective was to determine how Dr. Gray arrived at the estimates in Table 1 and Table 2 of that testimony and whether the data, approaches, and analyses underlying his testimony supported those estimates. Table 1 purports to show the relative "volume" of different categories of broadcast television programming that cable system operators (CSOs) retransmitted during the years 2010 through 2013 pursuant to the Section 111 statutory license. Table 2 purports to show the relative "distant viewing" of those program categories during the same years.

A copy of our report analyzing Dr. Gray's testimony is attached. Based upon our analysis of Dr. Gray's testimony and underlying data and for the reasons explained in our report, we conclude that: (1) Dr. Gray's Table 1 estimates do not accurately reflect "the volume of

programming purchased by the CSOs," as Dr. Gray claims; and (2) Dr. Gray's Table 2 estimates of "distant viewing" are unreliable and invalid.

We declare under penalty of perjury that the foregoing is true and correct. Executed on September 14, 2017.

William E. Wecker, Ph.D.

R. Garrison Harvey

programming purchased by the CSOs," as Dr. Gray claims; and (2) Dr. Gray's Table 2 estimates of "distant viewing" are unreliable and invalid.

We declare under penalty of perjury that the foregoing is true and correct.

Executed on September 14, 2017.

William E. Wecker, Ph.D.

R. Garrison Harvey

Appendix A

May 2017

WILLIAM E. WECKER

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EDUCATION

B.S.	Basic Science, U.S. Air Force Academy (1963)
M.S.	Operations Research, University of Michigan (1970)

Ph.D. Statistics and Management Science, University of Michigan (1972)

EMPLOYMENT

1963-1967	Fighter pilot, U.S. Air Force
1968-1969	Chief of Protocol, U.S. Air Force, Berlin, Germany
1970-1972	Graduate Student, University of Michigan
1973-1976	Assistant Professor, Graduate School of Business, University of Chicago
1977-1983	Associate Professor, Graduate School of Business, University of Chicago
1984-1985	Associate Professor, Graduate School of Management, University of California, Davis
1985-1989	Professor, Graduate School of Management, University of California, Davis
1994-1998	Consulting Professor of Law, School of Law, Stanford University
1990-	President, William E. Wecker Associates, Inc.

ACTIVITIES

1977-1981	Associate Editor (Theory and Methods), <u>Journal of the American Statistical Association</u>
1981-1999	Associate Editor, <u>Journal of Business and Economic Statistics</u>
1990-1992	Management Committee, <u>Journal of Business and Economic Statistics</u>
1976-1994	Seminar Leader, NSF/NBER Seminar on Time Series Analysis
1993-1994	National Advisory Council on Environmental Policy and Technology (Lead Subcommittee)
Member of:	American Association for the Advancement of Science American Statistical Association Institute of Mathematical Statistics Society for Risk Analysis

Society for Risk Analysis

PUBLICATIONS

- "A Nonparametric Approach to the Construction of Prediction Intervals for Time Series Forecasts" (with W. A. Spivey), <u>Proceedings of the Business and Economic Statistics Section--American Statistical Association</u>, 1972.
- "Regional Economic Forecasting: Concepts and Methodology" (with W. A. Spivey), <u>The Regional Science Association Papers</u>, Vol. 28, 1972, pp. 257-276.
- "On the Weighted Average Cost of Capital" (with R. R. Reilly), <u>Journal of Financial and Quantitative</u> Analysis, January 1973, Vol. VIII, pp. 123-126.
- "On Random Walks with Absorbing Barriers" (with Thomas E. Morton), <u>Proceedings of the Business and Economic Statistics Section-- American Statistical Association</u>, 1973.
- "Prediction Methods for Censored Time Series," <u>Proceedings of the Business and Economic Statistics</u> Section--American Statistical Association, 1974.
- "More on the Weighted Average Cost of Capital: Reply" (with R. R. Reilly), <u>Journal of Financial and Quantitative Analysis</u>, June 1975.
- "Predicting Mail Order Demand for Style Goods," <u>Proceedings of the Business and Economic Statistics Section--American Statistical Association</u>, 1975.
- "The Prediction of Turning Points," <u>Proceedings of the Business and Economic Statistics Section</u>—American Statistical Association, 1976.
- "Bounds on Absorption Probabilities for the m-Dimensional Random Walk" (with T. Morton), <u>Journal</u> of the American Statistical Association, March 1977.
- "Discounting, Ergodicity and Convergence of Markov Decision Processes" (with T. Morton), Management Science, April 1977.
- "Comments on 'Forecasting with Econometric Methods: Folklore versus Fact'," <u>Journal of Business</u>, 1978, pp. 585-586.
- "Comment on 'Seasonal Adjustment When Both Deterministic and Stochastic Seasonality Are Present'," <u>Proceedings of the NBER-CENSUS Conference on "Seasonal Analysis of Economic Time Series</u>," U.S. Government Printing Office, Washington, D.C., 1978, pp. 274-280.
- "Predicting Demand from Sales Data in the Presence of Stockouts," <u>Management Science</u>, 1978, Vol. 34, No. 10, pp. 1043-1054.
- "The Time Series Which Is the Product of Two Stationary Time Series," <u>Stochastic Processes and Their Application</u>, 1978, pp. 153-157.
- "Predicting the Turning Points of a Time Series," <u>Journal of Business</u>, January 1979, Vol. 52, pp. 35-50.

- "A New Approach to Seasonal Adjustment," <u>Proceedings of the Business and Economic Statistics</u> Section--American Statistical Association, 1979.
- "Linear and Nonlinear Regression Viewed as a Signal Extraction Problem" (with C. Ansley),

 <u>Proceedings of the Business and Economic Statistics Section-- American Statistical Association</u>,
 1980.
- "Asymmetric Time Series," Journal of the American Statistical Association, March 1981.
- "Predicting a Multitude of Time Series" (with R. A. Thisted), <u>Journal of the American Statistical Association</u>, September 1981.
- "Applications of the Signal Extraction Approach to Regression" (with C. Ansley), <u>Proceedings of the Business and Economic Statistics Section--American Statistical Association</u>, 1981.
- "Nonparametric Multiple Regression by Projection Iteration" (with C. Ansley), <u>Proceedings of the</u> Business and Economic Statistics Section--American Statistical Association, 1982.
- "The Signal Extraction Approach to Nonlinear Regression and Spline Smoothing" (with C. Ansley), Journal of the American Statistical Association, March 1983.
- "Extensions and Examples of the Signal Extraction Approach to Regression" (with C. Ansley), Applied Time Series Analysis of Economic Data, A. Zellner (ed.), Washington, D.C.: Bureau of the Census/ASA, 1983.
- "The Signal Extraction Approach to Estimating Income and Price Elasticities: A Data Example" (with C. Ansley), <u>Proceedings of the Business and Economic Statistics Section--American Statistical</u> Association, 1983.
- "A Nonparametric Bayesian Approach to the Calibration Problem," (with C. Ansley), <u>Proceedings of the Business and Economic Statistics Section--American Statistical Association</u>, 1984.
- "On Dips in the Spectrum of a Seasonally Adjusted Time Series" (with C. Ansley), <u>Journal of Business and Economic Statistics</u>, October 1984.
- "Estimating Damages in a Class Action Litigation" (with E. George), <u>Journal of Business and</u> Economic Statistics, April 1985.
- "Statistics in Accounting, Marketing, Finance and Production" (with R. Hamada, J. Patell, R. Staelin), <u>Proceedings of the Business and Economic Statistics Section--American Statistical Association</u>, 1986.
- "The Role of Statistics in Accounting, Marketing, Finance and Production" (with R. Hamada, J. Patell, R. Staelin), <u>Journal of Business and Economic Statistics</u>, 1988.
- "Assessing the Accuracy of Time Series Model Forecasts of Count Observations," <u>Journal of Business and Economic Statistics</u>, October 1989.

- "Impact of the Soviet Grain Embargo; A Comparison of Methods" (with A. Webb, et al.), <u>Journal of</u> Policy Modeling, pp. 361-389, 1989.
- "Modeling Daily Milk Yield in Holstein Cows Using Time Series Analysis" (with H. Deluyker, et al.), Journal of Dairy Science, pp. 539 548, 1990.
- "Controlling Emissions from Motor Vehicles: A Benefit-Cost Analysis of Vehicle Emission Control Alternatives" (with L. Lave, et al.), <u>Environmental Science & Technology</u>, August 1990.
- "Statistical Estimation of Incremental Cost from Accounting Data" (with R. Weil), <u>Handbook of Litigation Services for Accountants and Lawyers</u>, John Wiley & Sons, 1990.
- "Correcting for Omitted-Variables and Measurement-Error Bias in Regression with an Application to the Effect of Lead on IQ" (with M. L. Marais), <u>Journal of the American Statistical Association</u>, June 1998.

Appendix B

January, 2017

R. GARRISON HARVEY

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EDUCATION

B.S. (Applied Mathematics) (1988), USAF Academy

M.S. (Operations Research) (1992), Air Force Institute of Technology

PROFESSIONAL EXPERIENCE

1988 - 1990	Scientific Analyst, USAF, Vandenberg AFB, CA
1990 - 1992	Graduate Student, USAF, Air Force Institute of Technology
1992 - 1995	Scientific Analyst, USAF, Scott AFB, IL
1992 - 1993	Total Quality Management Instructor, USAF, Scott AFB, IL
1992 - 1995	Adjunct Professor, Belleville Area College, Belleville, IL
1996 - 1999	Senior Consultant, William E. Wecker Associates, Inc.
2000 -	Vice-President, Principal Consultant, William E. Wecker Associates, Inc.

HONORS

Meritorious Service Medal.

Air Mobility Command Officer of the Year, 1993.

Barchi Prize, 1994 Military Operations Research Society.

Best Application of Operations Research/Management Science Achievement Award, 1993. The Institute of Management Science/Operations Research Society of America, St. Louis Gateway Chapter.

PUBLICATIONS/PRESENTATIONS

- "Constrained System Optimization and Capability Based Analysis" (with K. Bauer, J. Litko), <u>Military Operations Research</u>, Vol 2, No 4, 1997, pp. 5-19.
- "Military Modeling and Simulation: Reflections and Directions", <u>1994 Winter Simulation Conference Proceedings</u>, pp. 741-743.
- "Constrained System Optimization and Capability Based Analysis", 62nd Military Operations Research Society, National Meeting, 1993.
- "Force Allocation Through Constrained Optimization", 61st Military Operations Research Society, National Meeting 1993. Awarded Best Working Group Paper.
- "Experimental Design Considerations in the Optimization of Stochastic Response Surfaces", Sponsored Session presentation, TIMS/ORSA Joint National Meeting, Chicago 1993.
- "C-141 Depot Maintenance: Using Simulation to define Resource Requirements" (with T. Schuppe, D. McElveen, P. Miyares), <u>Air Force Journal of Logistics</u>, Winter-Spring 1993, pp. 11-15.

- "Force Allocation Through Constrained Optimization of Stochastic Response Surfaces" (with K. Bauer, J. Litko), 1992 Winter Simulation Conference Proceedings, pp. 1121-1129.
- "C-141 Depot Maintenance: Using Simulation to Define Resource Requirements" (with T. Schuppe, D. McElveen, P. Miyares), 1992 Winter Simulation Conference Proceedings, pp. 1145-1152.
- Invited lectures at: University of Washington in St. Louis, University of St. Louis, United States Air Force Academy, and Air Force Institute of Technology.

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ANALYSIS OF

WRITTEN DIRECT TESTIMONY OF JEFFREY S. GRAY, PH.D.

IN THE 2010-13 CABLE ROYALTY DISTRIBUTION PROCEEDING BEFORE THE COPYRIGHT ROYALTY JUDGES

By

William E. Wecker, Ph.D. R. Garrison Harvey

September 15, 2017

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I. INTRODUCTION AND SUMMARY

- 1. We understand that Section 111 of the Copyright Act grants cable system operators ("CSOs") a "statutory license" to retransmit the copyrighted programming on out-of-market (distant) broadcast television stations. To qualify for this license, the CSOs must pay statutorily-prescribed royalty fees, which are collected by the U.S. Copyright Office. The Copyright Royalty Judges ("Judges") allocate the Section 111 royalties among claimant groups that represent different categories of retransmitted programming, as identified in the Judges' November 25, 2015 order in this proceeding ("Agreed Categories"). We further understand that in allocating royalties, the Judges employ a relative market value standard, *i.e.*, they seek to determine what the CSOs would have paid, on a relative basis, for each of the Agreed Categories in a free market with no statutory license.
- 2. In the proceeding to allocate the 2010-13 cable royalties, Jeffrey S. Gray, President of Analytics Research Group, LLC, has submitted written testimony to the Judges on behalf of one of the claimant groups, Program Suppliers.² Table 1 of Gray's testimony purports to show the "volume" of programming that CSOs retransmitted during the years 2010 through 2013. Table 2 purports to show the "distant viewing" of that programming. Gray states that his "volume" calculations are "imperfect" measures of relative market value of the Agreed Categories while his "viewership shares correspond to reasonable cable royalty shares" for those program categories.³ Notably, however, there is relatively little difference between Gray's "volume" estimates and his "viewership estimates." Each Agreed Category would receive roughly the same royalty

¹ The Agreed Categories are Canadian Claimants, Commercial Television ("CTV"), Devotionals, Program Suppliers, Public Television ("PTV"), and Joint Sports Claimants ("JSC").

² Testimony of Jeffrey S. Gray, Ph.D. (as corrected April 3, 2017) ("Gray Testimony").

³ Gray Testimony, ¶38.

share (within a few percentage points) whether based on his "volume" estimates or his "viewership estimates."

- 3. The Joint Sports Claimants⁴ requested that William E. Wecker Associates, Inc. review the Gray testimony. Our analysis determined how Gray arrived at the estimates in Table 1 and Table 2 and assessed whether the data and methods used by Gray are a valid basis of support for those estimates. While Gray describes the general approach he followed in preparing Tables 1 and 2, he does not describe precisely how he arrived at the Tables 1 and 2 estimates. By examining the computer programs and databases underlying Gray's testimony we were able to determine the details of his calculations, the limitations of the data upon which he relied, and the several unstated assumptions he made when he manipulated that data in order to arrive at the bottom-line numbers in Tables 1 and 2.
- 4. Based upon our analysis of Gray's testimony and underlying data as well as other relevant materials discussed below, we conclude that: (1) Gray's Table 1 estimates do not accurately reflect "the volume of programming purchased by the CSOs," as Gray claims; and (2) Gray's Table 2 estimates of "distant viewing" are unreliable and invalid. We have corrected Gray's Table 1 calculations the corrections appear in Table 2 below. However, a correction is not possible for the Gray Table 2 estimates because Table 2 relies upon data that cannot properly be used to measure "distant viewing" and Gray's regression techniques do not resolve the underlying issues with the data.

⁴ The Joint Sports Claimants are the Office of the Commissioner of Baseball, the National Football League, the National Basketball Association, the Women's National Basketball Association, the National Hockey League and the National Collegiate Athletic Association.

- II. GRAY STATES THAT HIS "VIEWERSHIP" ESTIMATES PROVIDE A BETTER MEASURE OF RELATIVE MARKET VALUE THAN HIS "VOLUME" ESTIMATES BUT THERE IS LITTLE DIFFERENCE BETWEEN THESE TWO ESTIMATES
 - 5. Relying upon data provided by the Cable Data Corporation ("CDC") and Gracenote, Inc.⁵ ("Gracenote") as well as an algorithm he devised, Gray estimates what he describes as the "volume of programming purchased by the CSOs" during 2010-13 and each of the Agreed Categories' shares of that "volume." He reports his estimates in Gray Table 1, "Levels and Shares of Retransmissions and Volume by Royalty Year." Gray states that these estimates of "total volume of minutes of programming retransmitted by CSOs effectively represent[] the volume of programming purchased by the CSOs . . ." and that "program volume provides useful information concerning the relative value of programming to CSOs . . ." According to Gray, the volume of programming retransmitted "provides an imperfect metric" of relative market value of the Agreed Categories.⁸
 - 6. Gray then states that "viewership" estimates of "[a]udience size, which is determined through program viewership, is . . . the most direct measure of a program's relative value" and that "the share of viewing minutes provides a superior measure of relative value." Gray describes his Table 2 estimates as the relative "viewership" during 2010-13 of each of the Agreed Categories using the data and algorithm noted above as well as data provided by The Nielsen Company ("Nielsen") and his own statistical analysis of that data. He reports the results of his analysis in Gray Table 2, entitled

⁵ Gray also uses Canadian data from the Canadian Radio-television and Telecommunications Commission data ("CRTC").

⁶ Gray Testimony, ¶32.

⁷ Gray Testimony, ¶¶17 & 18.

⁸ Gray Testimony, ¶34; *see also* Gray Testimony, ¶22 ("relative volume of programming by claimant category . . . provides good, but imperfect, indicators of the relative value of the sets of programming at issue in this proceeding").

⁹ Gray Testimony, ¶¶19 & 34.

"Distant Viewing Levels and Shares by Royalty Year." According to Gray, the "viewership" shares in his Table 2 "correspond to reasonable cable royalty shares" and he urges the Judges to allocate the 2013 cable royalty funds according to those shares. 11

7. While Gray distinguishes between the relevance of "volume" estimates and "viewership" estimates, his estimates of those two metrics show little difference, as set forth in Table 1 below. With the exception of the Devotional and PTV categories, all of the other Agreed Categories estimates are approximately the same (less than three percentage points difference) regardless of whether one focuses on "volume" or "viewership"; for the Devotional and PTV categories the difference is slightly greater about 5.3 to 6.4 percentage points.

Table 1: 2010-13 Gray Volume vs. Viewership Shares

Agreed Category	2010-13 Avg. Gray Volume Share	2010-13 Avg. Gray Viewership Share	Difference
Canadian Claimants	1.1%	3.7%	2.6%
CTV	CTV 14.3%		0.8%
Devotionals	7.9%	1.4%	6.4%
Program Suppliers	48.4%	45.5%	2.8%
PTV	27.7%	33.0%	5.3%
JSC	0.6%	2.9%	2.2%

III. GRAY TABLE 1 SHARE ESTIMATES DO NOT ACCURATELY REFLECT THE VOLUME OF COMPENSABLE DISTANT SIGNAL PROGRAMMING **PURCHASED BY CSOS DURING 2010-13**

8. We explain below how Gray arrived at his "volume" estimates and why those estimates do not accurately reflect the "volume of programming purchased by CSOs," as Gray claims. In sum, Gray fails to show the number of subscribers to whom the CSOs retransmitted the programming, and he fails to properly categorize certain JSC

Gray Testimony, ¶38.Gray Testimony, ¶38.

programming. When these errors are corrected, the relative volume shares of each Agreed Category changes by approximately five percentage points or more, with the Program Suppliers' share dropping by approximately 17 percentage points.

A. Gray's Sample Stations

9. The calculations in Gray Table 1 (and Table 2) are based on a stratified random sample of broadcast stations ("Sample Stations"), rather than an analysis of all stations whose signals were retransmitted by CSOs during 2010-13. According to CDC, "Form 3" cable systems (those that paid approximately 97% of the 2010-13 cable royalties) retransmitted approximately 1240-1400 broadcast stations each year as distant signals during the period 2010-13. See Appendix A, Table A-1. Gray chose a stratified random sample of approximately 150 such stations each year, ¹² approximately 11.4 percent of all retransmitted stations. See Appendix A, Table A-5. Stratification was based upon the number of cable subscribers who received those signals on a distant basis. For example, there were between 29 and 46 "Stratum 5" stations each year and Gray's sample included all (100%) of these stations. See Appendix A, Tables A-1, A-4. These "Stratum 5" stations reached the most distant subscribers (an average of 1.4 million subscribers per year). ¹³ See Appendix A, Table A-2. There were between 632 and 792 "Stratum 1" stations each year; Gray's sample only included approximately 2.8% of these stations. See Appendix A, Tables A-1, A-4. These "Stratum 1" stations reached the fewest distant subscribers (an average of 1,808 subscribers per year). See Appendix A, Table A-2.

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¹² We are using the term "station" as synonymous with "call sign" as done by Gray in his Appendix B and footnote 22. For example, Gray treats CBUT and CBUT-DT as two stations. ¹³ WGNA, a Stratum 5 station, reached by far the most distant subscribers with an average of 42 million distant subscribers. The average number of distant subscribers who received Stratum 5 stations excluding WGNA is 294,070 — this is more than 160 times (=294,070 /1,808) larger than the average distant subscribers of Stratum 1 stations.

10. Gray does not explain in his written testimony why he used a stratified sample tied to the number of distant subscribers. Presumably, however, he wanted to ensure that his volume and viewing calculations accounted for those stations that reached the most subscribers and contributed the most to the cable royalty funds.

B. Gray's Program Categorizations

- Gracenote, Inc. and CRTC. He reviewed those schedules to identify "compensable" programs on the stations. We understand that, for purposes of the cable royalty distribution proceedings, "compensable" programs are (1) "non-network" programs, *i.e.*, programs that were not distributed by the ABC, CBS or NBC broadcast networks; and (2) programs that aired on the satellite-delivered WGNA simultaneously with its broadcast by WGN, the local station available off-air in the Chicago market. Based on our review of Gray's database and information provided by Bortz Media & Sports Group, Inc. identifying the compensable WGNA programming, Gray failed to include in his calculations many of the compensable Sports telecasts on WGNA. The result of this Gray error is to understate the "volume" of JSC programming.
- 12. Gray assigned each compensable program to one of the Agreed Categories using an algorithm he devised as well as manual reviews of the programming.¹⁶ Gray stated that he included all telecasts of Major League Baseball ("MLB") and National

¹⁵ There were 117, 109, 121, and 116 compensable Sports telecasts (Chicago Cubs, White Sox and Bulls games) on WGNA during 2010-13 respectively (source: "JSC Telecasts on WGNA and FOX.XLSX"). Gray is missing compensable Sports telecasts in each year 2010-13, he only included 114, 104, 55, and 42 on WGNA during 2010-13 respectively (source:

¹⁴ Grav testimony, ¶27.

[&]quot;wgn_compensable_cubs_bulls_sox.xlsx"). Very few of the compensable Sports telecasts identified by Gray have any reported distant viewing according to the Lindstrom data (see Appendix C and D). However, those Sports telecasts had substantial viewing according to data provided by Nielsen to Major League Baseball. See ¶26 below.

¹⁶ Gray testimony, ¶27, n.25.

Hockey League ("NHL") games on Canadian stations in the Sports category. 17 However, based upon our review of his database, we found that Gray failed to include in the Sports category any of the MLB, NHL and National Basketball Association ("NBA") telecasts, and all but two of the National Football League ("NFL") telecasts, ¹⁸ on Canadian signals; Gray incorrectly placed all of this Sports programming in the Canadian category (i.e., non-JSC category). Gray, therefore, misclassified more than 99% of the more than 25,000 "records" of Canadian sports broadcasts. The effect of this Gray error, like his failure to include compensable JSC programming on WGNA, is to understate the JSC volume share.

C. **Corrected Gray Table 1 "Volume" Estimates**

- 13. Gray totaled the number of compensable minutes broadcast by the Sample Stations in each of the Agreed Categories for each of the years 2010-13. He then projected his calculations to the entire universe of broadcast television stations retransmitted by CSOs during each of those years using his sample weights. The results of these calculations and projections are set forth in Gray Table 1.²⁰
- 14. Gray Table 1 shows that, for example, there were 501,885,381 "Minutes of Retransmissions" in 2010. We know from other data underlying Gray's testimony that

¹⁸ Only Super Bowl XLVI (2012) and Super Bowl XLVII (2013) are classified as JSC by Gray.

¹⁹ For purposes of Gray's analysis, a "record" is a compensable fifteen-minute segment of

¹⁷ Grav testimony, ¶29.

programming on one of the Sample Stations. *See* ¶21 below.

The column labeled "Minutes of Retransmissions" shows the number of minutes of compensable programming by Agreed Category while the column labeled "Share of All Volume" shows each Agreed Category's share of the total number of minutes of compensable programs retransmitted. In addition to the Gray estimate of "volume" of compensable broadcasts minutes, Table 1 also presents estimates of the number of compensable broadcast programs. The column in Gray Table 1 labeled "Retransmissions" reports the number of compensable programs by Agreed Category while the column labeled "Share of All Retransmissions" reports each Agreed Category's share of the total number of compensable programs retransmitted. Gray's Retransmissions calculations treat all programs the same, regardless of the amount of time that they were broadcast, e.g., a 30-minute sitcom is treated the same as a 3-hour MLB telecast.

CSOs retransmitted 1,239 broadcast television stations on a distant basis in 2010. Thus, Gray Table 1 estimates that, on average, each station contributes approximately 405,073²¹ minutes (or equivalently 6,751 [=405,073/60] hours). Gray, therefore, is estimating that the 2010 "volume" equals the total number of minutes of compensable programming broadcast in 2010 by the 1,239 stations retransmitted by CSOs on a distant basis.

According to Gray, the "total volume of minutes of programming 15. retransmitted by CSOs effectively represents the volume of programming purchased by the CSOs "22 But Gray Table 1, although it also refers to "retransmissions," ignores the number of distant subscribers that actually received the retransmissions. It treats all program broadcast minutes the same across all stations after adjusting for the probability of sampling each station — a minute of programming on WGNA, which reached over 40 million subscribers, is treated the same as station that reached only a few hundred subscribers; WGNA's average share of predicted volume in Gray Table 1 is less than 0.02 percent in 2010, with even lower percentages for the years 2011-2013. Because they fail to account for the number of subscribers to which CSOs made the programs available, the Grav Table 1 estimates do not accurately represent the "volume of programming purchased by CSOs" (emphasis added). At best, and placing to one side the categorization errors noted above. Grav Table 1 reflects the volume of compensable programming minutes televised by distant signals without regard to the number of CSOs that retransmitted those minutes or the number of distant subscribers to which the signals were retransmitted. ²³

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²¹ 405,073 avg. minutes= 501,885,381 minutes /1,239 stations.

²² Gray Testimony, ¶17.

²³ Written Rebuttal Testimony of Dr. Mark A. Israel, ¶¶33-36.

16. In Table 2 below, we have recalculated Gray's Table 1 "volume" share estimates to account for the number of distant subscribers that received the broadcast transmissions as well as the categorization errors discussed above.²⁴

Table 2: Corrected Gray "Volume" Shares²⁵ ²⁶

Agreed Category	2010	2011	2012	2013	Average
Canadian Claimants	3.9%	5.4%	7.3%	7.7%	6.1%
Commercial Television	19.1%	19.1%	20.3%	18.0%	19.1%
Devotionals	4.3%	2.7%	1.5%	1.7%	2.6%
Program Suppliers	38.4%	32.6%	26.3%	28.7%	31.5%
Public Television	28.2%	34.4%	38.3%	36.9%	34.4%
JSC	6.0%	5.9%	6.3%	7.0%	6.3%

17. In Table 3 below, we compare the average 2010-13 volume shares from Gray's original Table 1 estimates to the corrected average 2010-13 volume shares in Table 2 above. As Table 3 reflects, accounting for the number of distant subscribers to which CSOs retransmitted programming in the Agreed Categories during 2010-13 (and correcting the mis-categorizations of Canadian sports programs and the missing WGNA compensable sports programs) changes each of the 2010-13 "volume" shares of the Agreed Categories. Among other things, it increases the JSC share by 5.7 percentage points (more than a 1,000 percent increase) and decreases the Program Suppliers share by approximately 17 percentage points (a 35 percent decrease). As this suggests, the JSC

²⁴ For example, in our Table 2 for 2013, each minute broadcast on WQAD-DT3 is multiplied by only four distant subscribers while each minute broadcast on WGN-DT is multiplied by 42,522,609 broadcast distant subscribers.

²⁵ This table corrects Gray Table 1 to account for the number of distant subscribers that received the broadcast transmissions as well as to correct Gray's errors regarding the exclusion and miscategorization of compensable JSC programming. Our Table 2 above is weighted using Gray "wgt" variable (i.e., the Gray sampling weight to account for his stratified sample of stations) as done by Gray when he estimated Table 1 and also weighting by distant subscribers (Gray variable AvgTotalDistantSubscribers).

Approximately 20% of the Program Suppliers' 31.5% volume share is attributable to Paid Programming (i.e., infomercials). Without that Paid Programming, the Program Suppliers share of volume would be approximately 25.2%.

programming is broadcast disproportionately by stations that receive greater distant signal carriage while Program Suppliers' programming is broadcast by stations that receive disproportionately less distant carriage.

Table 3: Comparison of 2010-13 Average Volume Shares: Gray Table 1 Shares v. Corrected Gray Table 1 Shares

Agreed Category	2010-13 Avg. Gray Volume Share	2010-13 Avg. Gray Volume Share (Corrected)
Canadian Claimants	1.1%	6.1%
Commercial Television	14.3%	19.1%
Devotionals	7.9%	2.6%
Program Suppliers	48.4%	31.5%
Public Television	27.7%	34.4%
JSC	0.6%	6.3%

IV. THE GRAY TABLE 2 ESTIMATES OF "DISTANT VIEWING LEVELS AND SHARES" ARE INVALID AND UNRELIABLE

Table 2 and why those estimates are invalid and unreliable. In sum, Gray's Table 2 does not provide valid and reliable estimates of distant viewership for several reasons, including (i) the audience data upon which Gray relies are not designed to or suitable for measuring distant viewership of his Sample Stations; (ii) the dataset upon which Gray relies lacks data for approximately 94% of the quarter-hour increments of compensable programming at issue; (iii) the dataset upon which Gray relies does not reconcile with and is substantially different than a separate dataset provided by Nielsen; (iv) Gray's regressions do not fix the fundamental problems with the Gray data including the approximately 94 percent of the compensable distant viewing records where Lindstrom provided no data; (v) Gray's regressions attempt to predict distant viewership based on its relationship with local viewership, but the data Gray uses are not a reliable estimate of local viewership; (vi) Gray lacks what he calls "local" viewership data for approximately

61 percent of the quarter-hour periods he is attempting to predict; (vii) the unexplained assumptions underlying Gray's regression analysis are problematic in several respects, and (viii) the results in Gray's Table 2 are illogical and improperly marginalize WGNA, the most significant distant signal during 2010-13, and overvalue the least carried stations.

A. Lindstrom NPM Data

- 19. The "viewership" estimates set forth in Gray Table 2 are based on audience viewing data provided to Gray by Paul Lindstrom who, at the time, worked for Nielsen. Gray refers to the Lindstrom data as "Nielsen Local and Distant Viewing Household Meter Data for 2010-13," which he abbreviates as "Nielsen Household Meter Data." Nielsen uses different samples of metered households to collect audience data, ²⁸ and it is unclear from Gray's written testimony alone which of the multiple, different Nielsen samples was the source of data provided by Lindstrom and utilized by Gray in making his Table 2 predictions. However, the Program Suppliers have advised JSC that Gray used data taken solely from a subset of Nielsen's National People Meter ("NPM") household sample.²⁹
- 20. Lindstrom says that he "designed custom analyses of national household metered viewing data" for Gray.³⁰ These analyses were "custom" in the sense that Lindstrom provided Gray with what he says was a subset of 2010-13 NPM data data concerning viewership by NPM cable households of programming broadcast by the Sample Stations during 2010-13. Lindstrom divided the households into those located

²⁸ Written Rebuttal Testimony of Susan Nathan ("Nathan Testimony"), pp. 4-7.

²⁷ Gray testimony, ¶25.

²⁹ April 12, 2017 Letter From Counsel for Program Suppliers to Counsel for JSC. Gray's use of data from the NPM sample is problematic because Nielsen did not design the NPM sample to produce audience estimates of local or distant viewing of programs televised by individual broadcast stations. Rather, Nielsen designed the NPM sample to estimate nationwide viewing of nationally televised programs. Thus, Gray inappropriately sought to employ the NPM sample for purposes that the sample simply was not designed. *See* Nathan Testimony, pp. 8-10.

within counties that Program Suppliers identified as "local" to each station and those located outside those counties ("distant households").³¹

- 21. Based upon information he received from Gracenote and the CRTC, Gray identified 17.4 million quarter-hour segments ("records") in 2010-13 across all Sample Stations where compensable programming was broadcast to distant households. Gray sought NPM distant and local viewing information for each of these 17.4 million records. However, the dataset Gray received from Lindstrom contains no data whatsoever for approximately 16.4 million (94%) of the 17.4 million quarter-hour records for which Gray sought distant viewing data.³² While Gray does not report those numbers in his written testimony, he does say that "there are many instances of no recorded distant viewing of compensable retransmitted programs" in the NPM data he received.³³
- 22. In those rare instances (6 percent) where the Lindstrom dataset contains data about viewership for a given program, the data are limited. Within this 6 percent slice of the quarter-hour records, fully 84 percent [=4.94%/(100%-94.1%)] of the records reflect distant viewing by only a single household. As Table 4 below shows, each of 860,608 (4.94%) quarter-hour segments on the Sample Stations generated distant viewing

³¹ Lindstrom Testimony, pp. 4-5. Lindstrom says that "[w]here the viewing minutes to particular distant signal programs were so small as to be statistically insignificant, Nielsen's custom analysis would assign a zero viewing value." Lindstrom Testimony, p. 5. Lindstrom does not identify in his dataset what data Nielsen changed to a zero value, or what rules he used to determine when to make such modifications to the data. He has provided no documentation or details regarding this data manipulation. Mr. Lindstrom's explanation that the data was changed to a "zero viewing value" when the actual values "were so small as to be statistically insignificant" is not a valid basis for making the changes he made. There is no statistical principle stating that small or "statistically insignificant" observations should be changed to zero. Even if there were such a principle, which there is not, Mr. Lindstrom does not explain which data was "statistically insignificant", or how he determined that certain data were "statistically insignificant." We understand that Program Suppliers provided no documents or data that would explain which data values were changed to zero and what principles and methods were used to determine which data to change, but merely stated that Mr. Lindstrom "relied on his knowledge and experience" and that there are no underlying documents regarding this element of his testimony. ³² See Table 4 and Appendix B.

³³ Gray testimony, ¶35.

(for some or all of the quarter-hour) by only one NPM household during 2010-13; 128,308 (0.74%) quarter-hour segments generated distant viewing by two NPM households during that period; and so forth. Of all 1,027,281 records (6 percent of all records) with any data on viewing during 2010-13, there were only 34 quarter-hour segments that attracted more than 10 distant NPM households. Only 0.96 percent of all compensable viewing records report 2 or more distant viewing households.

Table 4: Distant Viewing Household Counts for all 17.4 Million Compensable Records in the Gray Data³⁴

Distant	istant Overall 2010-13	
Viewing	Record	
Households	Count	%
No Data	16,387,655	94.10%
1	860,608	4.94%
2	128,308	0.74%
3	27,273	0.16%
4	7,083	0.04%
5	2,342	0.01%
6	931	0.01%
7	394	0.00%
8	195	0.00%
9	71	0.00%
10	42	0.00%
11	17	0.00%
12	8	0.00%
13	3	0.00%
14	3	0.00%
36	1	0.00%
39	1	0.00%
43	1	0.00%
Total:	17,414,936	100%

23. The absence of data in the Lindstrom dataset, upon which Gray relies, is particularly stark for WGNA. Although WGNA reached over 40 million cable households each year on a distant basis,³⁵ the Lindstrom dataset shows that watched only

35 Gray Testimony, Appendix B.

 $^{^{34}}$ As explained in ¶21 above, Gray breaks compensable distant programing into records made up of quarter-hour segments. See Appendix B for by year details.

viewing was for in 2013). The Lindstrom dataset contains no other data about any of the other programs broadcast on WGNA in 2013. The Lindstrom dataset regarding WGNA is similarly sparse for the years 2010-2012. In 2010, the Lindstrom dataset show that there were a total of only 21 quarter-hour program segments (5.25[=21/4] hours) on WGNA viewed by any NPM cable households on a distant basis. The comparable numbers of distantly viewing households in 2011 and 2012 were 10 quarter-hours (2.4 hours) and 4 quarter-hours (1 hour), respectively. In no instance do the Lindstrom data report more than a single household watching any program on WGNA during any quarter-hour in 2010-13. *See* Appendices C & D.

24. The data Lindstrom provided Gray for WGNA also contrast with the data he provided Gray for other Sample Stations. For example, Appendix E shows (in the column labeled "Lindstrom NPM Distant") the quarter-hour segments on WGNA that attracted distant viewing in 2010 according to the Lindstrom data. The comparable number for KTNC-DT, which reached less than percent of the distant subscribers reached by WGNA, is suggesting that distant viewership of KTNC in 2010 was 900 times greater than that of WGNA.

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³⁶ Appendix C contains the full set of 2010-13 NPM data that Gray received from Lindstrom for all compensable programming on WGNA. Appendix D indicates how Gray coded that data to show the particular programs on WGNA. Note that if any NPM household recorded viewing to any portion of any quarter-hour, Gray considered that household as viewing the entire quarter-hour for purposes of his calculations. Thus, Gray counts this one minute of viewing of WGNA during 2013 as 15 minutes of viewing for purposes of his regression analysis and his Table 2 estimates.

The Lindstrom data reflect several anomalous results. For example, according to that data, the most viewed distant program during the year 2013, with NPM households, was a one quarter-hour segment of the "CHANNEL 2 ACTION NEWS AT 5:30AM," broadcast by the Atlanta ABC affiliated station WSB-DT. According to Gray, WSB-DT reached approximately distant subscribers (about of the number reached by WGNA). Yet, according to the Lindstrom data, this single record had 12 times the number of distant viewers than the total distant viewers on WGNA for all of 2013. Similarly, across all 17.5 million Gray records 2010-13, the third most viewed record was for a 15-minute period of a one hour talk show called "The Doctors" broadcast on WSB-DT on Tuesday, October 30, 2012 from 10am to 11am. The Lindstrom data reports there were distant viewers for the 10:45am to 11am record for The

- 25. According to the Lindstrom data, of the unique Sample Stations during 2010-13 with any distant viewing data, WGNA ranked 271 out of 312 Sampled Stations in terms of its average distant viewing. See Appendix F.
- We also have reviewed a separate NPM report that Nielsen prepared for 26. Major League Baseball ("MLB") showing distant viewing of compensable programming on WGNA during 2010-13.³⁸ This report shows very different results for WGNA than the custom report prepared by Lindstrom for Gray. Whereas the Lindstrom report contains almost no data about viewership of any compensable programming on WGNA during the years at issue, the separate Nielsen/MLB report shows significant viewership of programming on WGNA. See Appendix G.³⁹ According to the Nielsen/MLB report, distant cable households viewed each of on average. minutes of JSC programming on WGNA during 2010-13. The comparable numbers for the other Agreed households for each of Categories on WGNA were compensable minutes (Commercial Television) and households for each of minutes (Program Suppliers). See Table 5.

Doctors, with viewers from 10-10:45 am. Thus, according to the Lindstrom data, more NPM households viewed some portion of the last 15 minutes of one episode of The Doctors on the morning of October 30, 2012 than viewed all JSC programming on WGNA for all of 2010-13 combined. Gray includes minutes (= records X 15 minutes) of distant viewing for this single record of The Doctors in his regression analysis. The Lindstrom data, however, report that these households only watched The Doctors for a combined minutes (not minutes) — the majority of these distantly viewing households only watched The Doctors for one minute. The next most watched episode of The Doctors was a broadcast at 2 am on December 14, 2012. According to the Lindstrom Data, households distantly viewed some portion of a single 15-minutes period of this show but there was distant viewing of the other 45 minutes of the show. Gray includes minutes (= records X 15 minutes) of distant viewing for this single record of The Doctors in his regression analysis. The Lindstrom data report that these households only watched The Doctors for a combined minutes (not minutes) — each household only watched minute of the one-hour program.

This dataset excludes viewing in those counties that would be deemed local for purposes of Section 111.

³⁹ Appendix G identifies in the column labeled "MC US AA Proj (units)" the number of distant cable households that Nielsen estimated as watching each of the compensable programs on WGNA during 2010-213. The column labeled "Total Duration" shows the number of minutes each program aired.

Table 5: Distant Viewing of WGNA Compensable Programming (2010-13)⁴⁰

	JSC	Commercial Television	Program Suppliers
Distant Viewing Compensable Minutes			
Distant Average Household Viewing per Compensable Minute			

27. It should be noted that the distantly viewing households in the Nielsen/MLB data are not directly comparable to the Lindstrom data as reported and used by Gray. The Nielsen/MLB data report the Nielsen estimated distant cable households that viewed WGNA programming based upon the weighted NPM sample while the Lindstrom data purported to represent viewing by the unweighted (i.e., raw counts) NPM households. But Lindstrom provides no distant viewing data for virtually all of the compensable WGNA programming. The Nielsen/MLB report shows that there clearly was distant viewing of this programming.⁴¹

⁴⁰ I understand that the Nielsen viewing data for WGNA reflect approximately 92% of the compensable programming on WGNA from 2010-13. WGNA distant viewing data was not available for the 5:30 AM to 8:00 AM time period Monday-Friday, as well as for the periods from 5:30 AM to Noon on Saturday and 5:30 AM to 11:00 AM on Sunday. As such, certain compensable programming including devotional programming, early morning CTV programming and early morning PS programming is not included in Table 5. Written Direct Testimony of James M. Trautman, December 22, 2016.

⁴¹ Lindstrom provided Gray with both weighted and unweighted viewing data. Gray, however, chose to use only unweighted data; he treated a minute of viewing by one NPM household as equivalent to a minute of viewing by any other NPM household. This was not a proper use of the NPM data. *See* Nathan Testimony, pp. 9-10.

Indeed, Gray explains that the NPM data he uses "is based on a random sample of people in the United States." Gray Testimony, ¶26. Gray, however, errs by analyzing this data as if it were a "simple" random sample when it is not. The NPM service uses a complex stratified random sample and not a simple random sample. This is an important fact that Gray ignores. He uses the Nielsen data as if it were a simple random sample where each record had an equal chance of being sampled. The extreme variations in weights are obvious in the data Dr. Gray uses to perform this analysis. Average household weights can differ by a factor of up to 35 (and an average of 12). This means that Dr. Gray's assumption that 1 minute of viewing at Household A is equal to one minute of viewing at Household B is incorrect — Household A could represent 35 times more viewing than Household B according to the weights in the Lindstrom data.

B. Grav's Regression "Techniques"

Gray does not base his Table 2 estimates directly on the NPM data 28. provided by Lindstrom. Instead, Gray ran "multiple regression techniques" that use the Lindstrom data, among other things, as inputs to predict the values reported in his Table 2.⁴² Gray devotes a single paragraph of his testimony to identifying those "techniques." stating only that they "calculate the mathematical relationship each year from 2010 to 2013 between distant viewing for a program" (i.e., the dependent variable) and other independent variables, i.e., "(1) a measure of local viewing for the program; (2) the total number of distant subscribers of that station; (3) the time of day the program aired by quarter hour; and (4) the type of program aired."

29. Gray used his multiple regression techniques to predict the values on his Table 2 regardless of whether the Lindstrom dataset contained NPM data for a given station. In other words, even where Lindstrom provided Gray with affirmative NPM distant viewing data about a given program, Gray based his prediction of distant viewing on the results of his regression analysis rather than accept the distant viewing data provided by Lindstrom.

30. There are several problems with Gray's regressions. As an initial matter, the outputs of a regression analysis are only as good as the quality of the input data used by the regression. Gray's regression analyses estimate the relationship between the independent variables and the dependent variable (i.e., distant household viewing). They do not correct deficiencies or errors in the Gray data. Thus, while Gray suggests that the use of multiple regression compensates for the sparsity of data in the Lindstrom dataset, 43 the regression analyses do not solve this problem. Gray's regression model cannot

Gray Testimony, ¶36.Gray Testimony, ¶¶35-36.

compensate for the deficiencies in the underlying data. Table 6 shows the Gray predictions, based on his regressions, are not much different than the results calculated directly from the Lindstrom dataset — except that the regression increases the Program Suppliers' overall 2010-13 share by approximately six percentage points and decreases the CTV share by a like amount. See Appendix H for more details.⁴⁴

Table 6: Shares of Distant Viewing (2010-13)
Gray Table 2 Predicted vs. Shares Calculated Directly from Lindstrom Data

	Gray Table 2 Pred Distant \	Distant Viewing According to		
Agreed Category	All Sample Stations (Same as Table 2)	Only Sample Stations with Lindstrom data	Lindstrom Data (Only Sample Stations with Lindstrom data)	
Canadian Claimants	3.5%	1.3%	1.8%	
Commercial Television	13.8%	12.9%	19.4%	
Devotionals	1.5%	1.4%	0.4%	
Program Suppliers	45.7%	45.0%	38.7%	
Public Television	32.8%	36.5%	37.1%	
JSC	2.7%	2.9%	2.5%	

- 31. In order to run his regression, Gray had to decide how to address the fact that the Lindstrom dataset lacked viewership data for approximately 94 percent of the compensable quarter-hours of programming at issue. Gray does not explain in his written testimony precisely how he did so. However, Gray's approach is evident upon a review of the computer code that he developed. His approach is problematic in several respects.
- 32. Where the Lindstrom dataset set contained any household viewing data for at least one compensable quarter-hour broadcast (for either distant or local household viewing) for a given station, Gray deemed the data for all quarter-hours of all compensable broadcasts for that station to be complete and then assumed that the absence

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⁴⁴ Appendix H compares the results of Gray's regressions versus the NPM data that Lindstrom provided to Gray on a year-to-year basis.

of data for any given quarter-hour period should be coded as zero viewership. His code instructed the computer to designate any quarter-hour periods with no household viewing data as having zero viewers. For example and as discussed above, the Lindstrom dataset included only one quarter-hour record of a distantly viewing household on WGNA in 2013. Gray assumed that the absence of data for all of the other approximately 3,645 compensable quarter-hour periods on WGNA in 2013 reflected that no one watched any of those programs and coded all approximately 3,645 quarter-hour periods as zero distantly viewing households.

- 33. Gray used approximately 14.5 million quarter-hour records in his regression analysis (he excluded approximately 3 million records that he coded as having missing distant viewing see ¶34). Among the total 14.5 million records Gray used in his regression analysis, Gray coded approximately 13.4 million (92.9%) compensable quarter-hours, for which he received no viewership data from Lindstrom, as having zero distant household viewing. By choosing to code zero distant viewing for large stations such as WGNA, Gray created counterintuitive associations within the data where stations with extremely large distant subscribers are predicted to have low numbers of viewers. The coding of most periods of compensable programming on WGNA as having zero viewers understates the actual association between distant subscribers and distant household viewing. Again, none of this is explained or justified in the Gray testimony, and it conflicts with the data contained in the Nielsen/MLB report, which shows substantial viewing of compensable WGNA programming.
- 34. On the other hand, where the Lindstrom dataset contains no data on distant or local household viewing for a given station, Gray wrote computer code that deemed such data as "missing." Unlike a designation of zero, in this case every quarter-hour

period was designated as "missing", and this data was not used in the estimation of the regression analysis. Instead, the regression analysis (based on data with non-missing household viewing) was used to predict the distant household viewing for these records. Gray coded approximately 3 million quarter-hour periods of compensable programming as "missing" and he predicted the household viewing for these records.

35. There are multiple problems with Gray's use of "local" viewership data in his regressions. As an initial matter, Gray does not appear to follow his own methodology for establishing the relationship between local viewing and distant viewing. Specifically, Gray says he uses the "Log of Local Ratings" as one of his independent variables to predict distant viewing. However, we can see from Gray's computer code that he did not take the logarithm of Local Rating. Instead, he simply calculated "Local Ratings" without applying the logarithm. There is no explanation in Gray's written testimony as to why he departed from his stated "Log of Local Ratings" independent variable. One potential explanation is that it was not possible to take the logarithm of the 7.7 million quarter-hour records for which Lindstrom provided no local viewing data and to which Gray assigned a value of zero. Simply put, the logarithm of zero does not exist. Had Gray attempted to take the logarithm of zero for 7.7 million records, his computer program — unable to calculate the log of zero — would have

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⁴⁵ These stations with missing distant household viewing include stations in the US, Canada, Puerto Rico, Virgin Islands, and Mexico.

⁴⁶ Gray states "it is possible to obtain reliable estimates of distant viewing for all retransmitted programs by also relying on Nielsen measures of household viewing in each retransmitted station's local market." Gray Testimony, ¶35. He further states that "[t]he greater the number of people viewing a particular program on a per capita local basis, all else equal, the higher the level of distant viewing." Gray Testimony, ¶36.

⁴⁷ Gray Testimony, Appendix C. Gray does not explain in his report what "Log of Local Ratings" means. "Log" clearly refers to the logarithm of Local Rating. Gray's computer code defines "Local Ratings" as the ratio of local household viewing divided by total subscribership. It is unclear why Gray is using total subscribership (the sum of local and distant subscribership) to measure local viewership and Gray offers no justification for doing so.

classified all 7.7 million records as "missing" and would have excluded them from his regression analysis. Whatever the ultimate reason, Gray did not apply the "Log of Local Ratings" independent variable that he said he applied.

36. Moreover, notwithstanding his stated goal of predicting distant viewership based on the relationship between distant viewership and local viewership, Gray did not obtain from Lindstrom data that reliably measures local or distant household viewing for the Gray Sample Stations. Rather, the Nielsen data provided by Lindstrom was taken from the NPM sample, which is designed to estimate national viewership of broadcast programming. We understand that one cannot, as Gray attempts to do, simply isolate the NPM data for given counties and use such data as a proxy for local or distant household viewing. The NPM weighted viewing data are only representative of national, not local, viewing.48

37. Furthermore, even if one assumed that the data that Gray calls "local" is in fact a reliable measure of local viewership, the Lindstrom dataset does not contain such "local" data for 10.7 million of the 17.4 quarter-hour records of compensable programming for which Grav is attempting to predict distant viewing.⁴⁹ Thus, Grav is attempting to predict distant viewership based upon the relationship between distant viewership and local viewership, but he lacks data about what he calls local viewership (i.e., "Log of Local Ratings") for 61 percent [=10.7 million/17.4 million] of the records underlying Gray Table 2. In the 3 million records that Gray coded as missing local viewing, Gray imputed a value for local viewership by assuming that for each missing record that the local viewing would have been the same as the average local viewing for

Nathan Testimony, pp. 4-5, 8-9.
 Gray codes 7.7 million records as zero and 3 million records as missing.

all programs of the same program type shown during the same "time of day"⁵⁰ block on any Sample Station the entire year.

C. Gray Table 2 "Distant Viewing" Estimates

- 38. Gray's Table 2 is labeled "Distant Viewing Levels and Shares By Royalty Year." It contains estimates of the "Distant Viewing" and "Share of Distant Viewing" of each of the Agreed Categories for each of the years 2010-13. The column labeled "Distant Viewing" in Gray Table 2 is shown only as a whole number with no corresponding metric. For example, Total Distant Viewing in 2010 is shown as "1,149,455." According to Gray, Program Suppliers' "Distant Viewing" accounts for 585,521 of the 1,149,455.
- 39. Gray does not explain what unit of measurement is reflected in the "Distant Viewing" column. The "Distant Viewing" number reflects the number of households that Gray predicts viewed any portion of a quarter-hour of compensable programming that CSOs retransmitted during 2010-13 based on the Lindstrom NPM sample. The Gray counts of distantly viewing households do not distinguish between one household watching 120 minutes (i.e., eight quarter-hour records) of a program and eight households each watching 1 minute of the same program (i.e., eight total viewing minutes) in both cases the Gray data would report eight distantly viewing households even though the actual viewing minutes differ by a factor of 15.
- 40. As explained above, Gray does not account for what portion of any quarter-hour period that a NPM household actually viewed any given program. Thus, the "Distant Viewing" numbers in Gray Table 2 do not accurately reflect the amount of time that the predicted NPM households spent watching any of the Agreed Program categories.

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⁵⁰ Gray defines six "time of day" blocks of varying length.

Any of the "Distant Viewing" numbers in Table 2 could be off by a factor of as much as 15.⁵¹ Moreover, the estimates in Gray Table 2 are inaccurate because, as explained above, Gray ignores the fact that the NPM households have different weights in the Nielsen sample. These estimates cannot, in any event, be projected to the full universe of cable households for the Sample Stations.

41. The estimates in Gray's Table 2 lead to several illogical and anomalous results. As noted above, during 2010-13, WGNA was by far the single largest distantly retransmitted station — the WGNA share of distant subscribers (57% to 62%) and fees generated (74% to 78%) was predominant for all years 2010-13.⁵² Yet, Gray's Table 2 would allocate only about 1 percent of the 2010-13 royalties to all of the compensable programming on WGNA. See Figure 1.

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⁵¹ Gray's regression analysis uses 18.5 million distant viewing minutes (as Gray coded it from the Lindstrom NPM data). However, the Lindstrom data only report 11.3 million viewing minutes. The difference (7.2 million) is a function of Gray treating any minute of viewing within a 15-minute period as 15 minutes of viewing.

on the Statements of Account to individual signals. This process allows the CDC to estimate how much of the royalty fund was attributable to each signal, or, when aggregated, to each signal type. These apportioned royalties have been referred to in prior distribution proceedings as 'fee generation' or 'fees-gen.'" Exhibit CCG-4 (p. 3), Written Direct Testimony of Jonda Martin. CDC also determined the number of cable subscribers that receive each station on a distant signal basis. It then aggregates these numbers to reflect total distant subscribers (which double counts those subscribers who receive multiple stations). The figures in this section use the CDC data on fee-gen and total distant subscribers as reported in the dataset utilized by Gray Table 2.

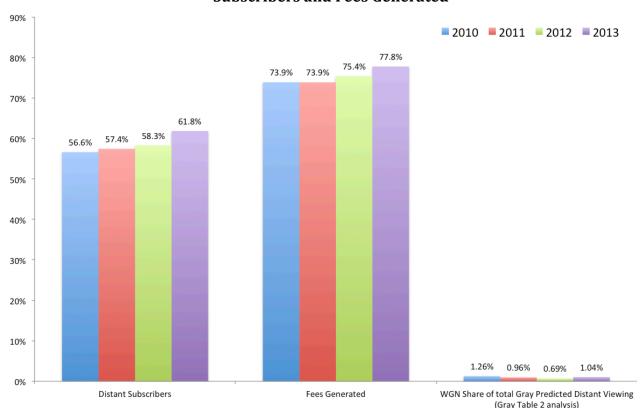


Figure 1: Gray's Prediction For WGNA Viewing vs. WGNA's Share of Distant Subscribers and Fees Generated

42. There is a similar disconnect between Gray's Table 2 results and the facts concerning Gray's Stratum 5 stations. Stratum 5 includes the largest stations by distant subscribership in Gray's sample (29 in 2010, 29 in 2011, 45 in 2012, and 46 in 2013). Appendix A, Table-A1. Figure 2 shows that these large stations in Stratum 5 had approximately 73 percent of the total distant subscribers and 84 percent of the total fees generated from all stations in 2010-13. Yet, Gray Table 2 predicts that the compensable programming on the largest Stratum 5 stations account for only approximately 18 percent of the 2010-13 distant viewing. In addition to the fact that 18 percent is disproportionately small, it is made up largely of programming on stations other than WGNA, even though WGNA is responsible for most of the distant subscribership and most of the fees generated for the Stratum 5 stations.

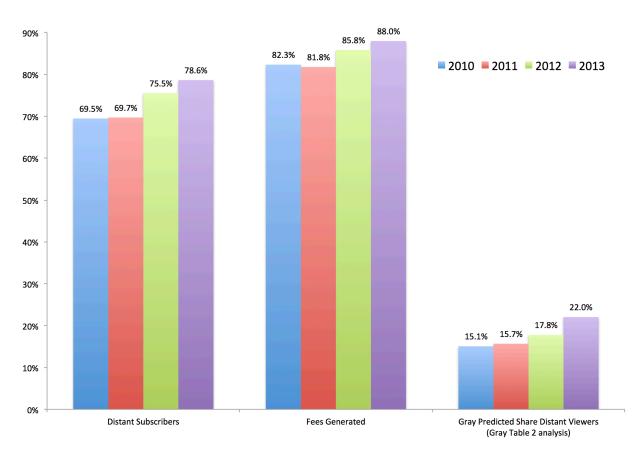


Figure 2: Gray's Prediction For "Stratum 5" Viewing vs. "Stratum 5" Share of Distant Subscribers and Fees Generated

43. Gray Table 2 also produces illogical results for the smallest stations whose programming was distantly retransmitted. Gray's Stratum 1 contains the 706 smallest stations (in 2011) with distant subscribers ranging from only *one* distant subscriber to a maximum of 6,464 distant subscribers — these 706 stations average 2,110 distant subscribers per stations.^{53,54} These 706 small stations in Stratum 1 had only 2 percent of

Station had only distant subscribers in 2013 (of total distant subscribers) and \$ fees generated (of total fees generated). Yet, the Lindstrom NPM sample data used by Gray report distant viewing households (unweighted), as compared to 1 single distant viewer for WGNA in 2013. Gray's uses his regression analysis (along with his sampling weights) to extrapolate his estimates of KUNW-LP to a larger population of Stratum 1 stations that Gray did not sample. Gray multiples his prediction for KUNW-LP by 41.68 to extrapolate his prediction of 41.68 Stratum 1 stations that he did not sample — Gray estimates KUNW-LP (as 41 similar stations he did not sample) are responsible for 17.63 percent of all distant viewers in 2013 (99,750 weighted distant viewing households), even though the 792 stations in Stratum 1 in 2013 together only comprised approximately 1.5% of distant subscribership and 1.4% of fees generated.

the total distant subscribers and only 1.9 percent of the total fees generated from all 1,338 stations in 2011.⁵⁵ However, Gray Table 2 would allocate 21.1% of the cable royalties for 2011 to these smallest stations.⁵⁶ The results are similar for 2010 and 2012-13. See Figure 3.

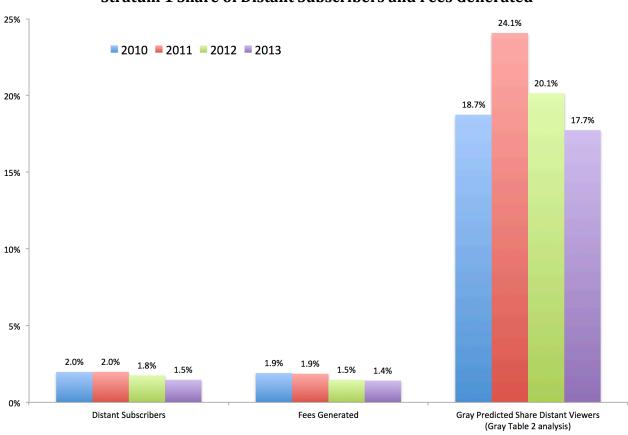


Figure 3: Gray's Prediction For Stratum 1 Viewing vs. Stratum 1 Share of Distant Subscribers and Fees Generated

In 2010, Gray coded 6 stations — WFXS-DT, KRPV-DT, WBMM-DT, KVIA-DT, KTFT-LP, and WWPX-DT—as having distant viewers. Individually and cumulatively, these six stations are small with only distant subscribers (percent of the total distant subscribers) and fees generated (percent of the total fees generated). Yet Gray predicts that these 6 stations, when weighted to the entire universe (based on the Gray sampling weights), account for 3.62 percent of the distant viewing share in Gray's Table 2. Gray therefore predicts that these six stations (with zero distant viewing in the Lindstrom NPM data) have a larger share (in Gray Table 2) than all of the JSC programming.

⁵⁵ Dr. Gray only sampled 21 of these 706 stations in Stratum 1. Dr. Gray uses his predictions for these 21 small stations to estimate the impact of 706 CSOs in Stratum 1.

⁵⁶ More than 50% [=(13.4%+10.1%)/45.5%] of the distant viewing share allocated to the Program Suppliers in Gray Table 2 comes from stations in Stratum 1 and 2. Likewise, Stratum 1 and 2 stations contribute 4 times more [=(13.4%+10.1%)/5.9%] to the Gray Table 2 Share for Program Suppliers than do Stratum 5 stations.

44. Similarly illogical are the results in Gray's Table 2 regarding paid programming (or "infomercials"). Table 7 shows that in three of the four years at issue, Gray Table 2 estimates that paid programming should receive more royalties (up to double) than all royalties for sports programming combined.

Table 7: Dr. Gray's Estimated Distant Viewing Shares for Sports Programming v. Paid Programming

	Sports Programming	Paid Programming	Paid Programming Divided by JSC
2010	2.13%	4.37%	205%
2011	2.57%	4.62%	180%
2012	2.06%	2.85%	138%
2013	4.76%	2.83%	59%
Average	2.88%	3.67%	146%

45. We compared Gray's predicted number of distantly viewing households to the number of distant viewing households reported in the Lindstrom dataset. If Gray's annual predicted distant viewing by station were reliable (which it is not), then the vast majority of the Gray distant viewing data (as reported in the Lindstrom NPM data) would fall within the confidence interval of Gray's predictions. We compared the viewing data as reported by Lindstrom to the confidence interval surrounding Gray's predicted distant viewing households in 2013— the annual distant viewing total reported by Lindstrom for 144 of 146 stations were *outside* of the confidence interval of the distant viewing predicted by Gray — this is a failure rate of 98.6 percent.

46. In sum, Gray Table 2 produces illogical results that are a reflection of Gray's attempt to use NPM data for a purpose it was not designed, an inadequate data set, and a regression analysis that exacerbates rather than solves the issues with the data set.

Appendix A: Dr. Gray's Sampling Methodology

Table A-1: Number of Stations In Each Stratum (including sampled and nonsampled stations)

Stratum	2010	2011	2012	2013	Total
Stratum 1	632	706	759	792	2889
Stratum 2	310	325	317	315	1267
Stratum 3	158	162	156	149	625
Stratum 4	110	116	105	96	427
Stratum 5	29	29	45	46	149
Overall	1239	1338	1382	1398	5357

Table A-2: Average Distant Subscribers by Station

Stratum	2010	2011	2012	2013	Total
Stratum 1	2,287	2,110	1,684	1,275	1,808
Stratum 2	13,000	12,307	10,020	8,842	11,043
Stratum 3	37,782	34,851	29,432	26,708	32,298
Stratum 4	98,277	99,891	83,692	71,774	89,171
Stratum 5	1,749,532	1,803,635	1,222,140	1,175,052	1,423,426

Table A-3: Percent of Total Distant Subscribers by Stratum

Stratum	2010	2011	2012	2013	Total
Stratum 1	2.0%	2.0%	1.8%	1.5%	1.8%
Stratum 2	5.5%	5.3%	4.4%	4.1%	4.8%
Stratum 3	8.2%	7.5%	6.3%	5.8%	7.0%
Stratum 4	14.8%	15.4%	12.1%	10.0%	13.1%
Stratum 5	69.5%	69.7%	75.5%	78.7%	73.2%

Table A-4: Probability of Sampling a Station (i.e., Percent of Stations Sampled)

Stratum	2010	2011	2012	2013	Average
Stratum 1	3.5%	2.8%	2.5%	2.4%	2.8%
Stratum 2	7.4%	6.5%	5.4%	6.3%	6.4%
Stratum 3	19.0%	14.2%	12.8%	14.8%	15.2%
Stratum 4	44.5%	51.7%	48.6%	45.8%	47.8%
Stratum 5	100%	100%	100%	100%	100%
Overall	12.3%	11.4%	11.0%	10.8%	11.4%

Table A-5: Total Sampled Stations

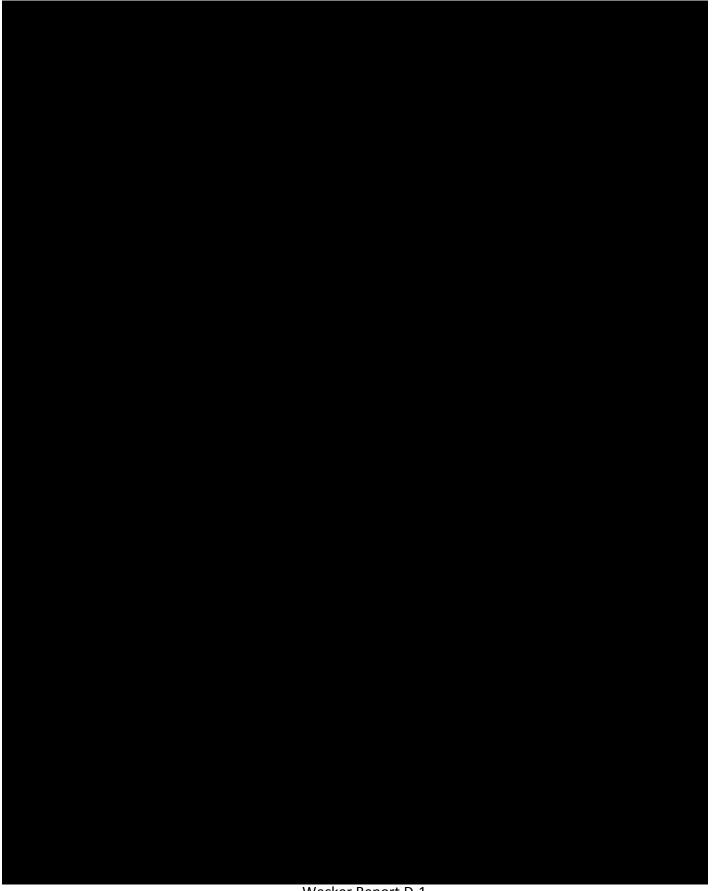
Stratum	2010	2011	2012	2013	Total
Stratum 1	22	20	19	19	80
Stratum 2	23	21	17	20	81
Stratum 3	30	23	20	22	95
Stratum 4	49	60	51	44	204
Stratum 5	29	29	45	46	149
Overall	153	153	152	151	609

Appendix B: Distant Viewing Household Counts for all 17.4 Million Compensable Records in the Gray Data

Distant	2010 2011		1	201	2	201	.3	Overall 20	10-13	
Viewing	Record		Record		Record		Record	Record		
Households	Count	%	Count	%	Count	%	Count	%	Count	%
No Data	3,929,052	93.15%	4,146,822	94.18%	4,001,602	93.72%	4,310,179	95.27%	16,387,655	94.10%
1	233,831	5.54%	215,158	4.89%	228,185	5.34%	183,434	4.05%	860,608	4.94%
2	41,953	0.99%	31,542	0.72%	31,570	0.74%	23,243	0.51%	128,308	0.74%
3	9,608	0.23%	6,760	0.15%	5,975	0.14%	4,930	0.11%	27,273	0.16%
4	2,514	0.06%	1,861	0.04%	1,446	0.03%	1,262	0.03%	7,083	0.04%
5	733	0.02%	692	0.02%	453	0.01%	464	0.01%	2,342	0.01%
6	278	0.01%	230	0.01%	200	0.00%	223	0.00%	931	0.01%
7	82	0.00%	98	0.00%	100	0.00%	114	0.00%	394	0.00%
8	37	0.00%	60	0.00%	33	0.00%	65	0.00%	195	0.00%
9	6	0.00%	31	0.00%	13	0.00%	21	0.00%	71	0.00%
10	2	0.00%	20	0.00%	6	0.00%	14	0.00%	42	0.00%
11	7	0.00%	8	0.00%			2	0.00%	17	0.00%
12	2	0.00%	5	0.00%			1	0.00%	8	0.00%
13			3	0.00%					3	0.00%
14			1	0.00%	2	0.00%			3	0.00%
36					1	0.00%			1	0.00%
39	1	0.00%							1	0.00%
43	1	0.00%				·			1	0.00%
Total:	4,218,107	100%	4,403,291	100%	4,269,586	100%	4,523,952	100%	17,414,936	100%

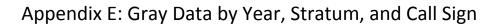


Appendix D: All Gray WGN Records With Any Distant Viewing (Based On Lindstrom Data)

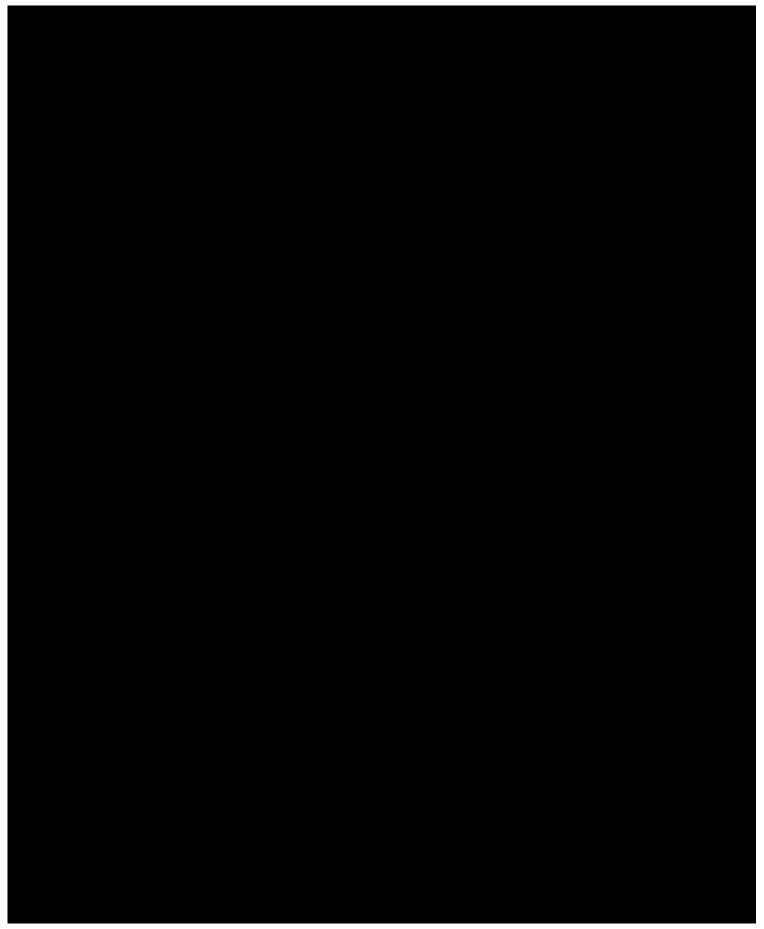


Year 2010					d "Viewing" f mple Station	•	Household Projected to	•
Stratum	Call Sign	Distant Subscribers	Records in Gray Data	Lindstrom NPM Local	Lindstrom NPM Distant	Gray Predicted Distant	Lindstrom NPM Distant	Gray Predicted Distant
All	All	56,297,633	4,218,107	10,400,000	363,077	418,249	737,307	1,149,454

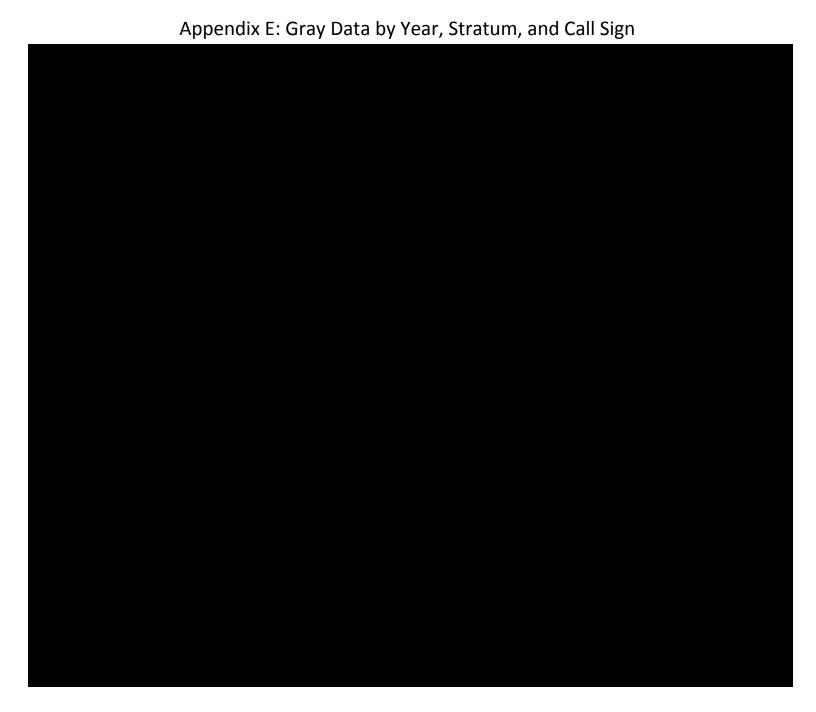
Yea	r 2010				mple Station	•	Projected to	U
Stratum	Call Sign	Distant Subscribers	Records in Gray Data	Lindstrom NPM Local	Lindstrom NPM Distant	Gray Predicted Distant	Lindstrom NPM Distant	Gray Predicted Distant
5	All	50,500,066	901,530	3,466,408	204,620	197,543	175,376	173,090
4	All	4,441,493	1,370,037	4,197,193	129,181	146,427	247,095	289,331
3	All	995,082	689,546	1,219,122	10,736	41,359	47,213	197,660
2	All	314,730	622,972	627,425	12,113	23,947	119,810	273,922
1	All	46,262	634,022	912,513	6,427	8,974	147,812	215,452

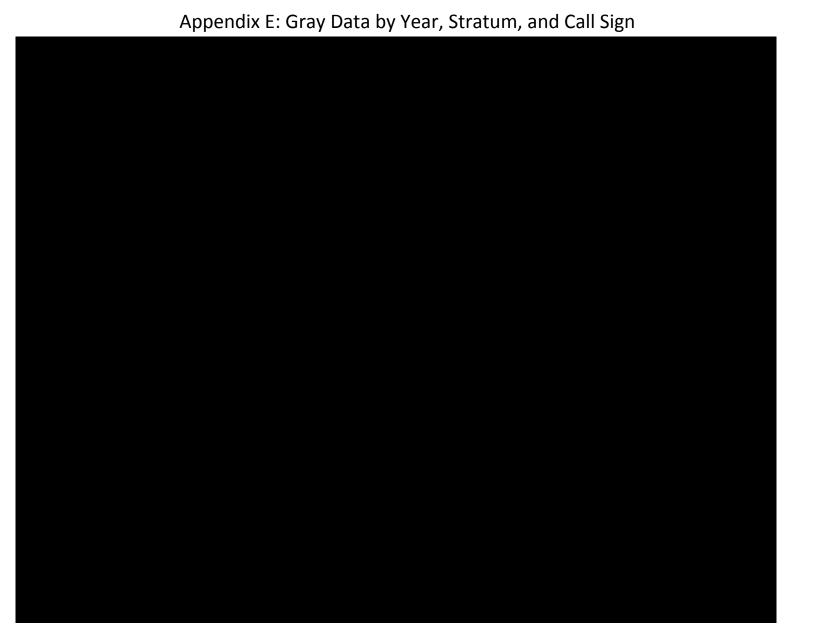


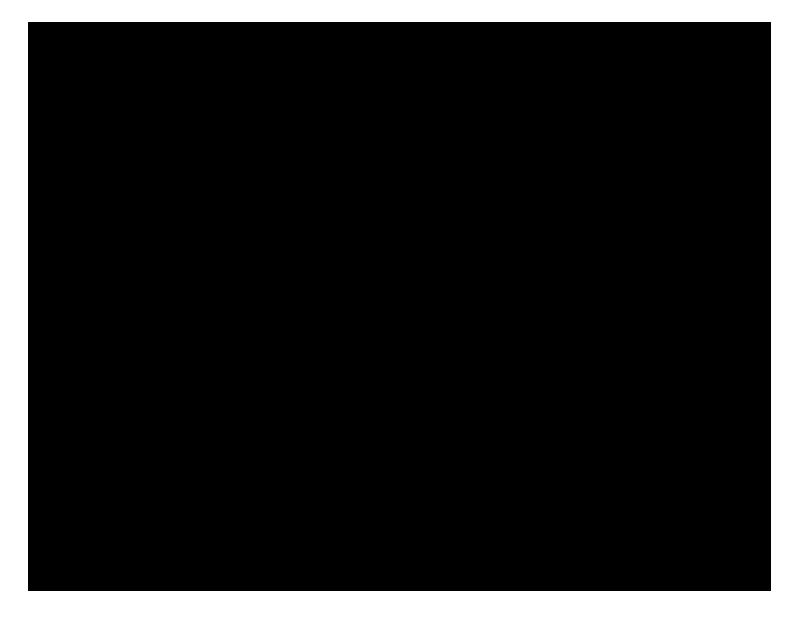








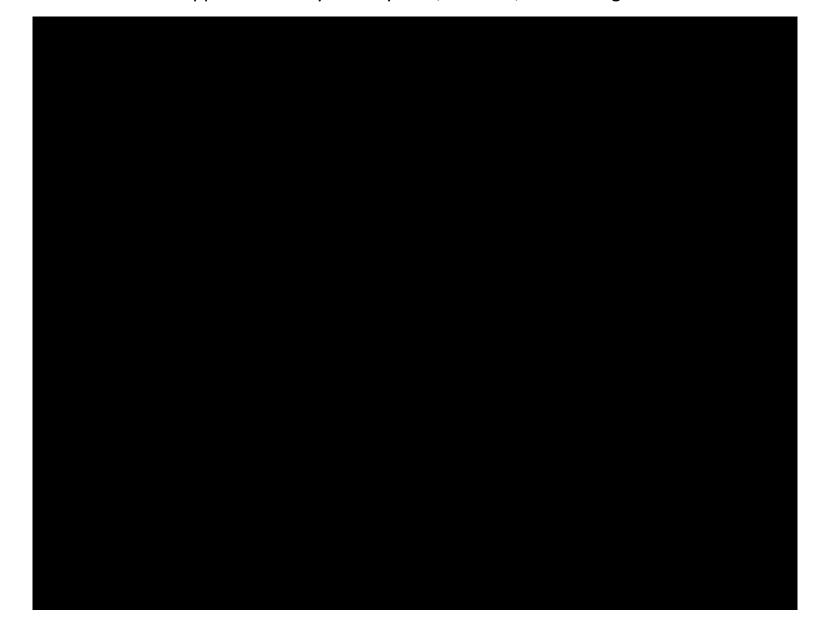




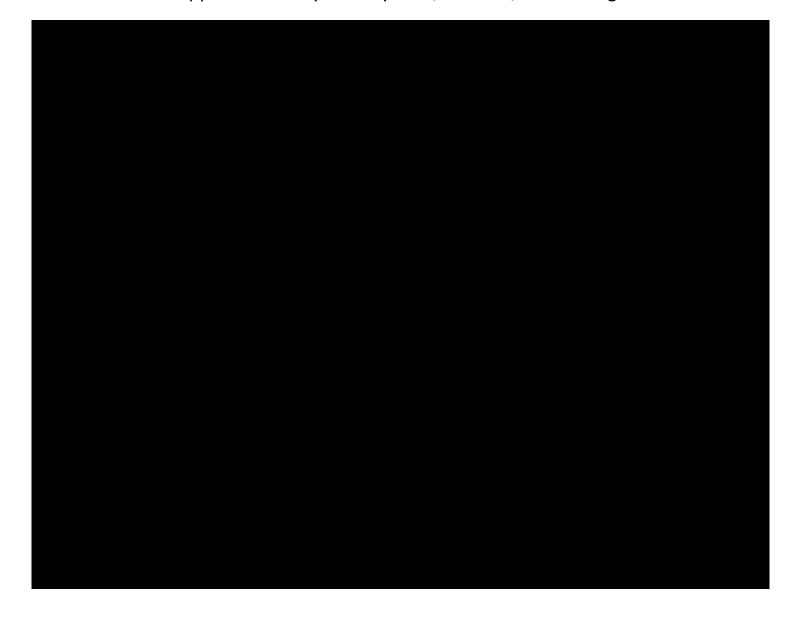


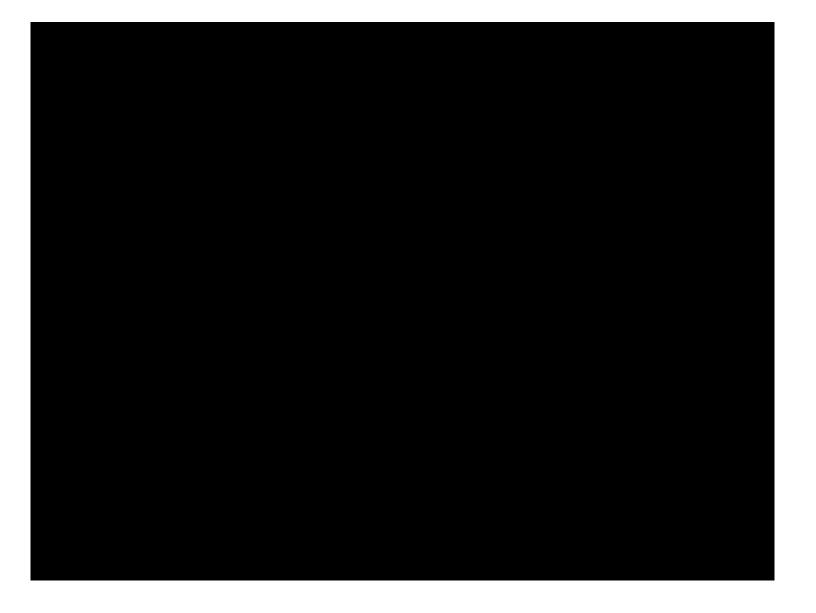


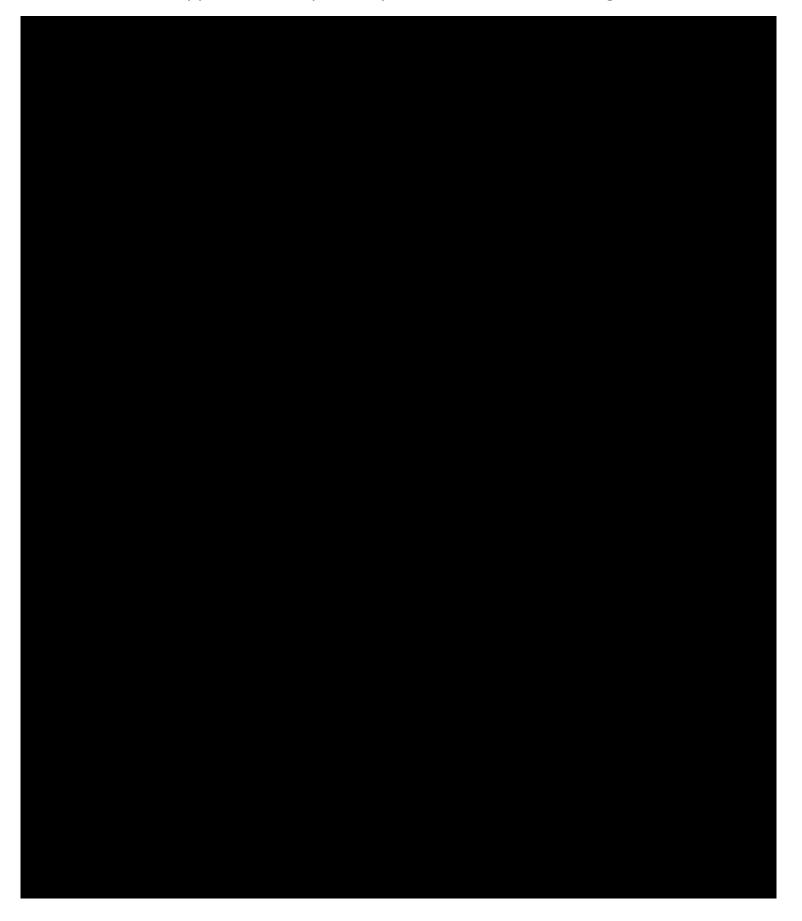


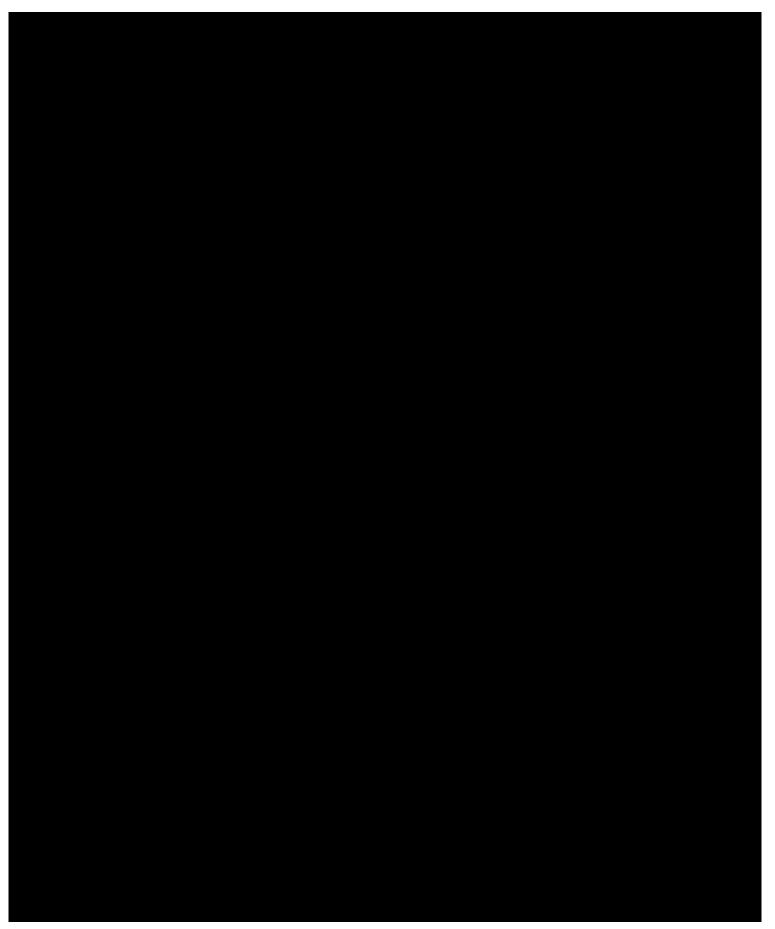






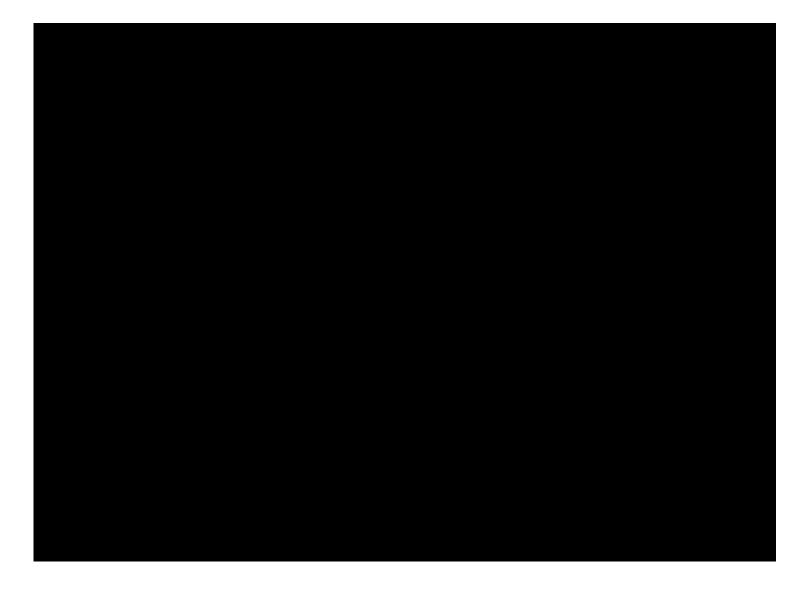


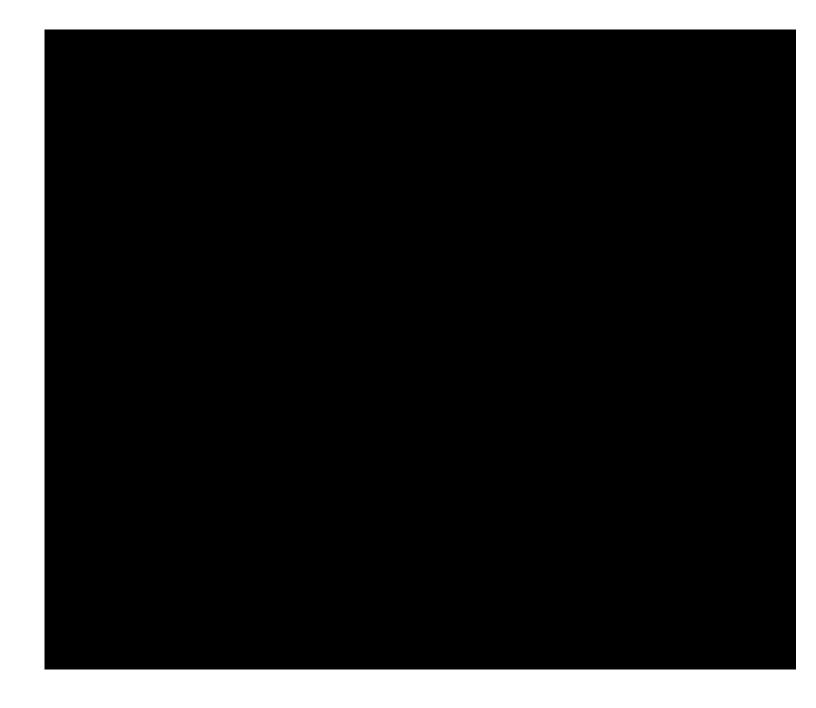


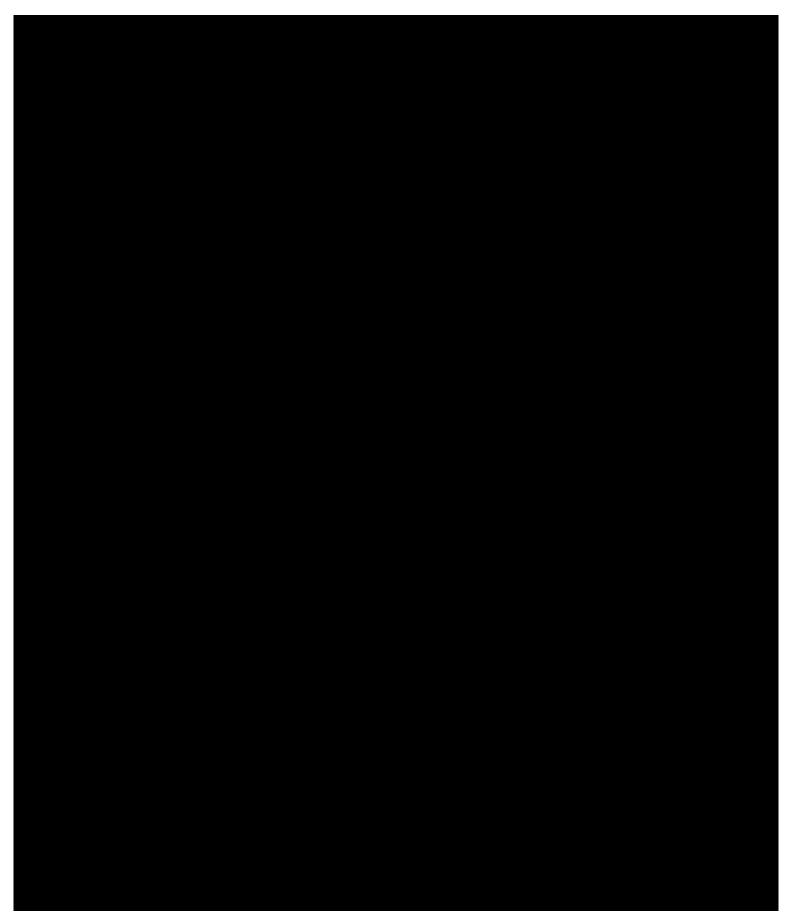






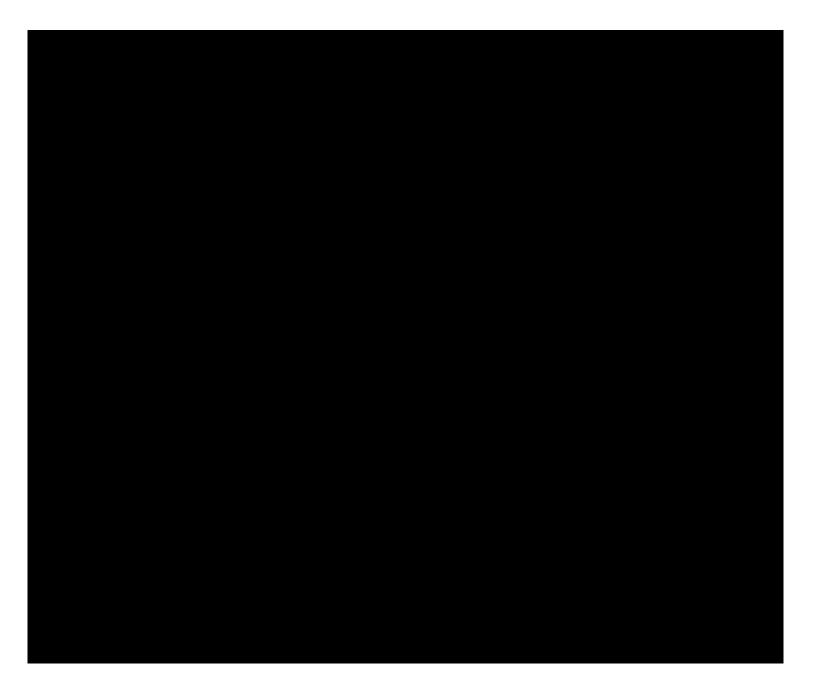




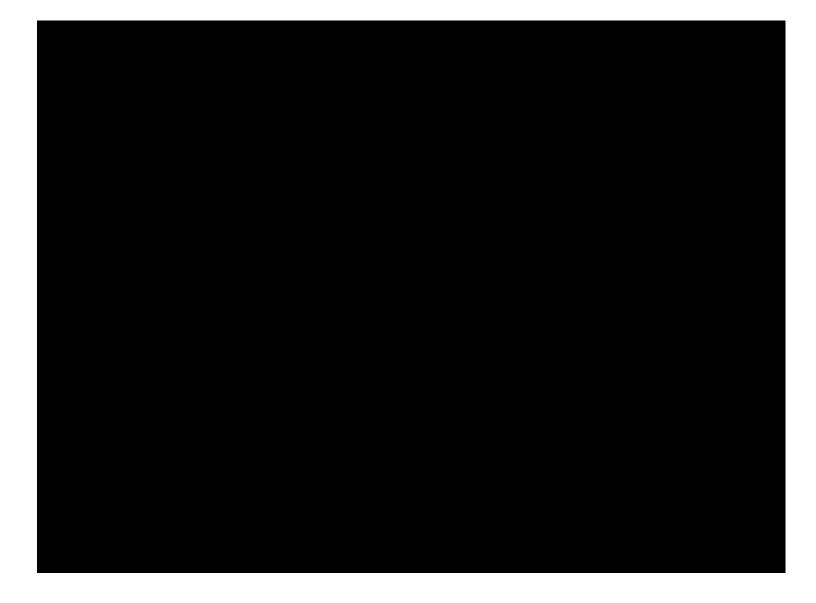








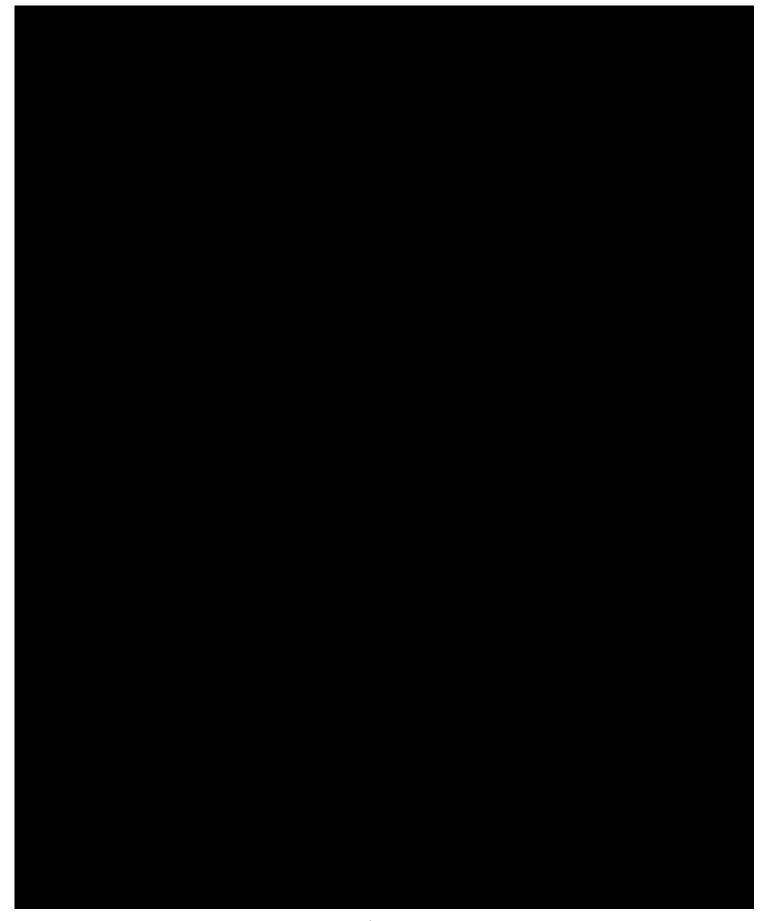


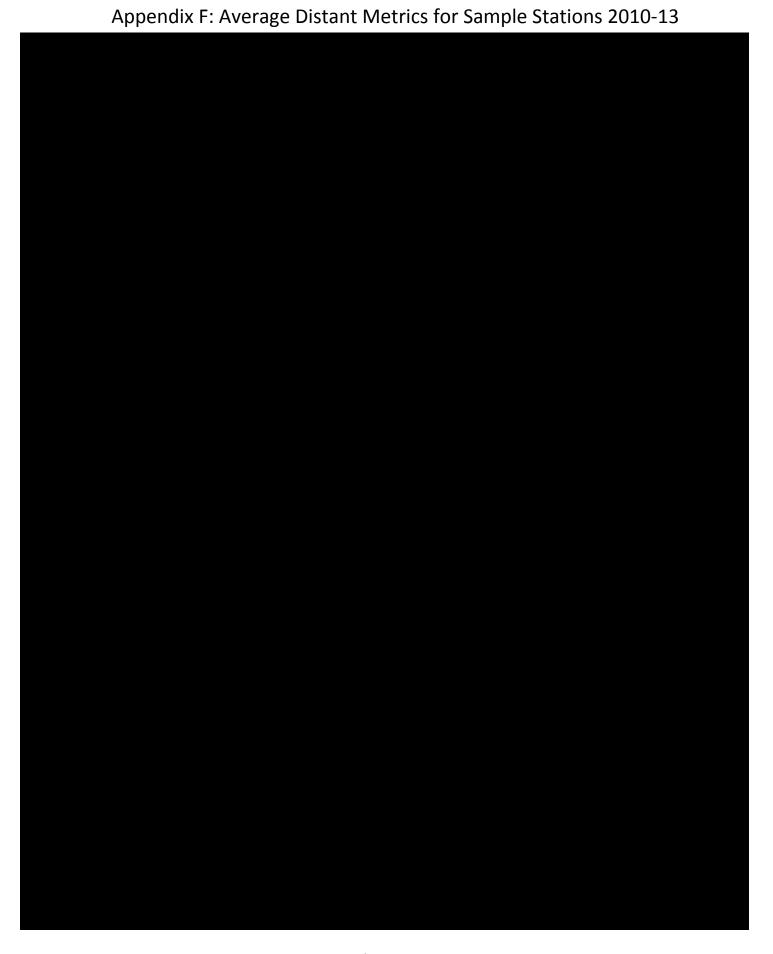




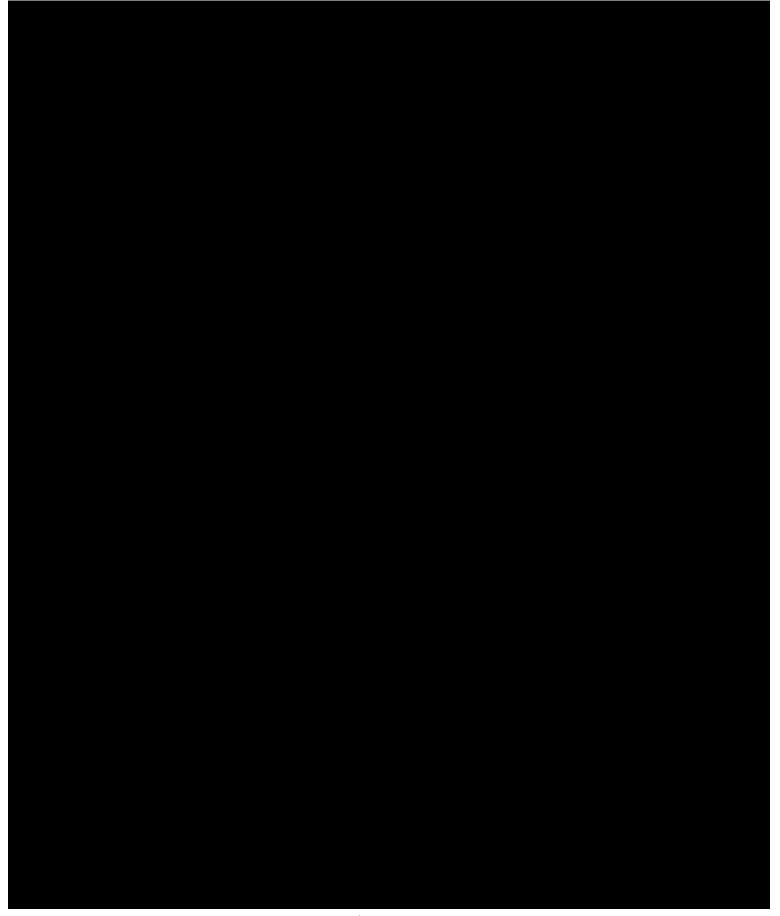


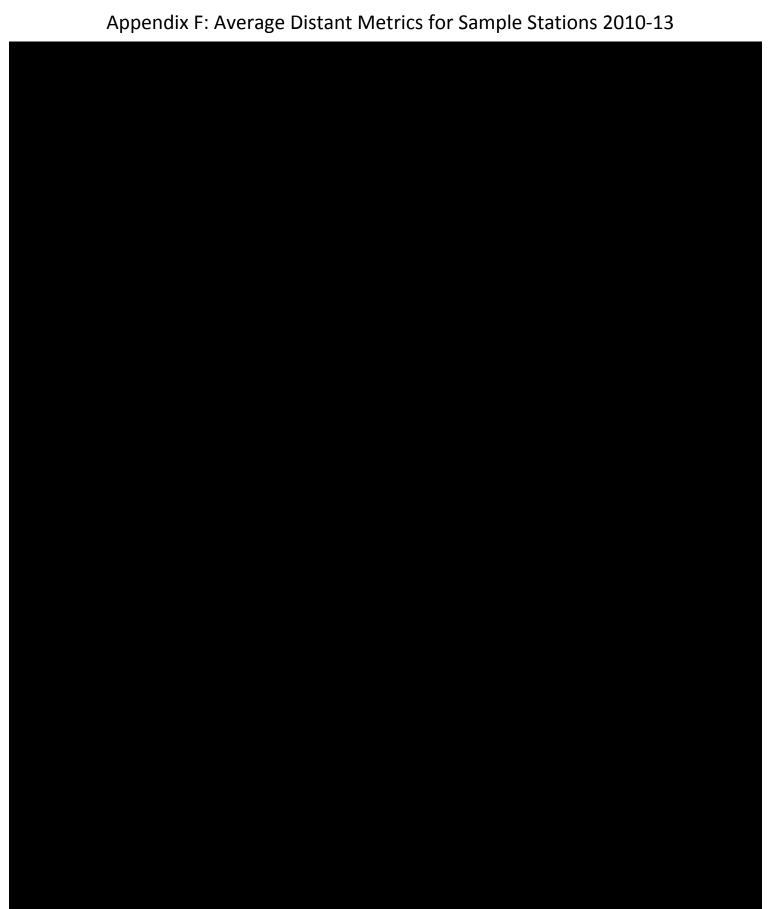
Appendix F: Average Distant Metrics for Sample Stations 2010-13



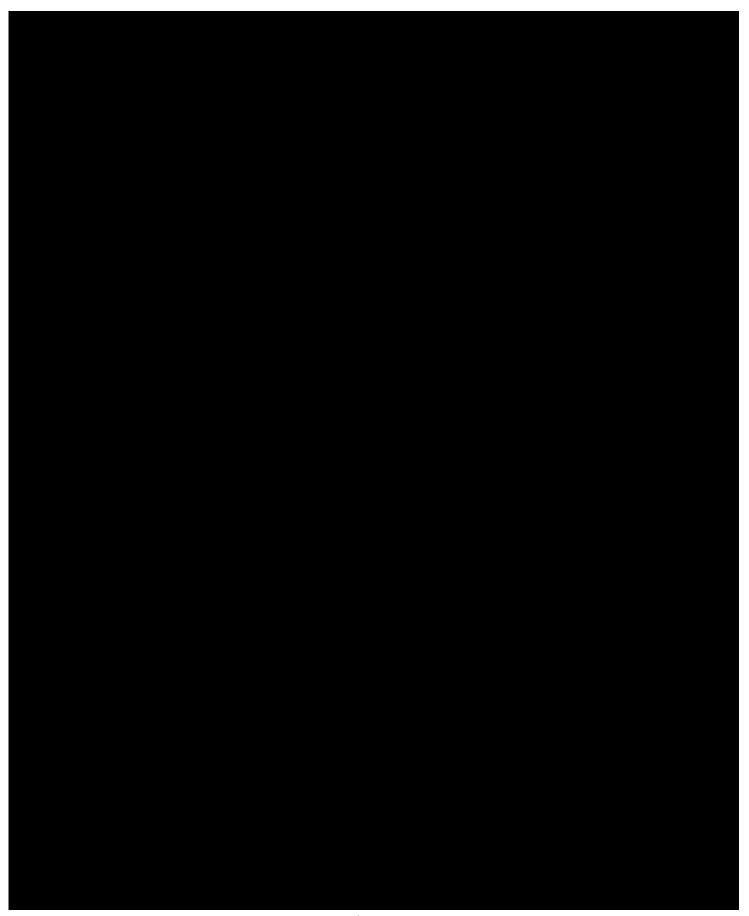


Appendix F: Average Distant Metrics for Sample Stations 2010-13

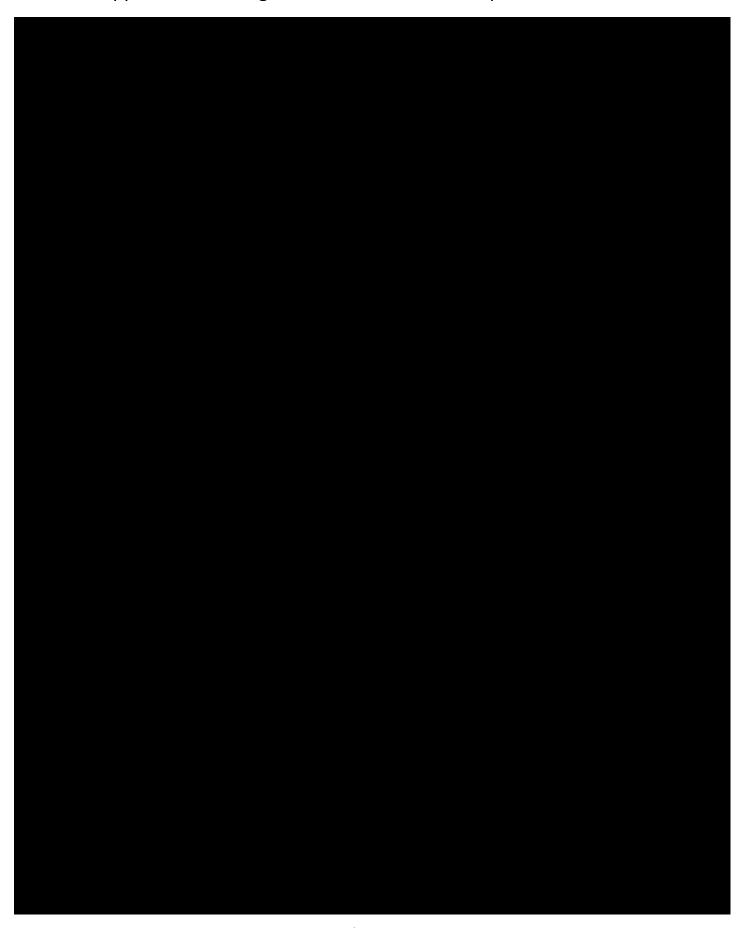




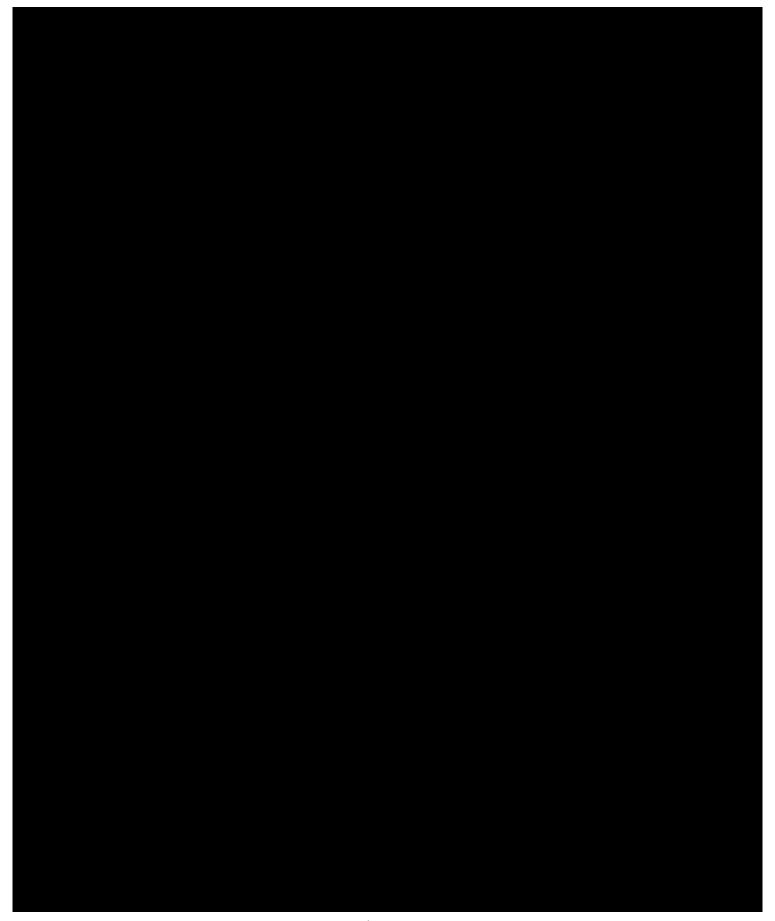




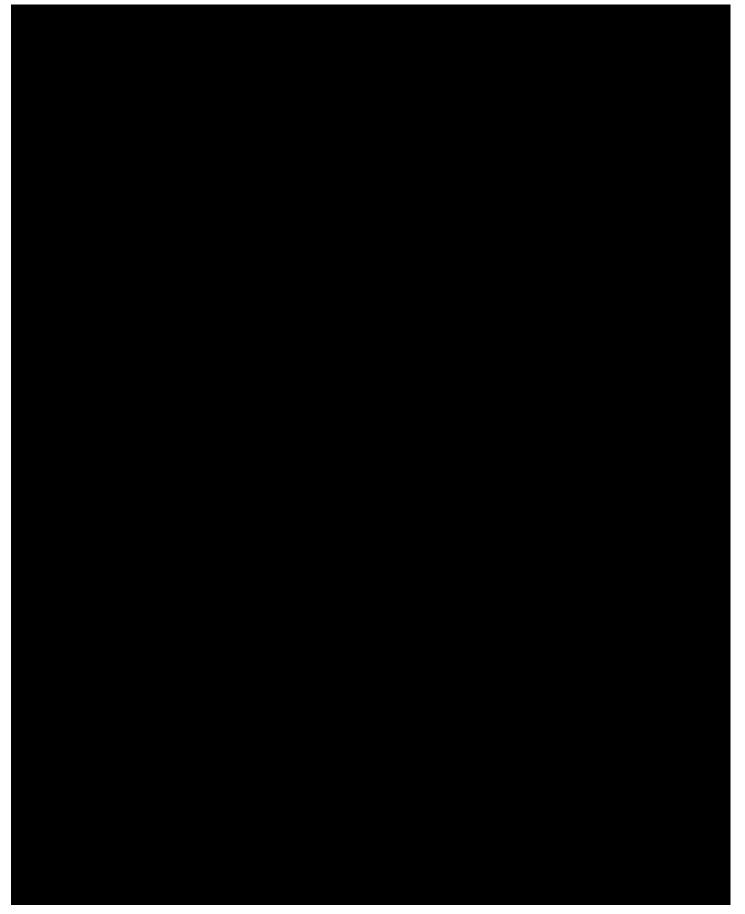
Appendix F: Average Distant Metrics for Sample Stations 2010-13



Appendix F: Average Distant Metrics for Sample Stations 2010-13



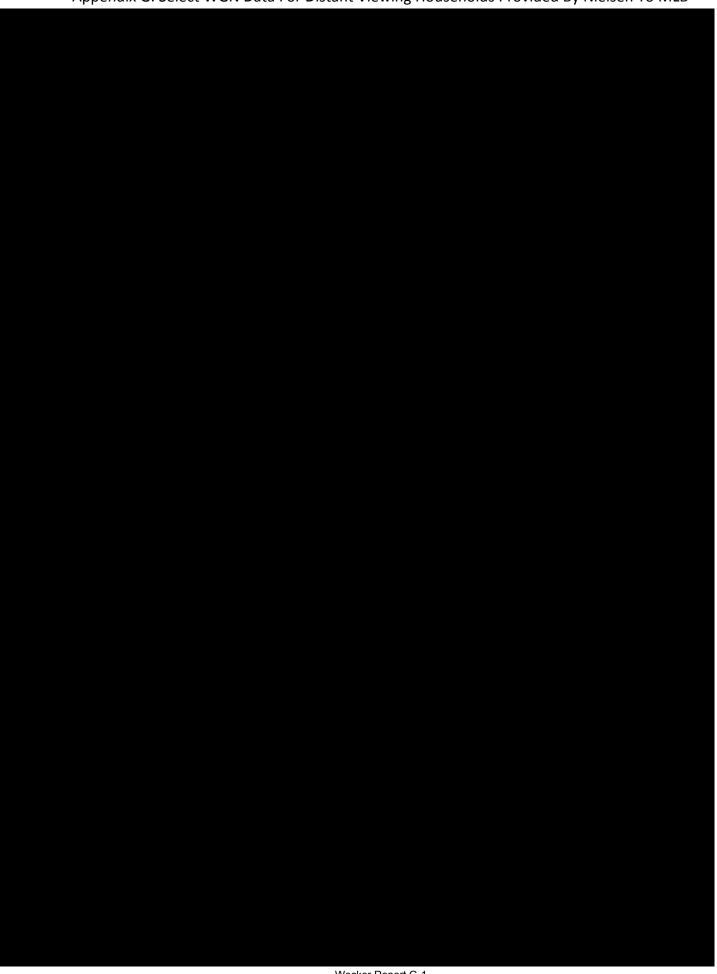


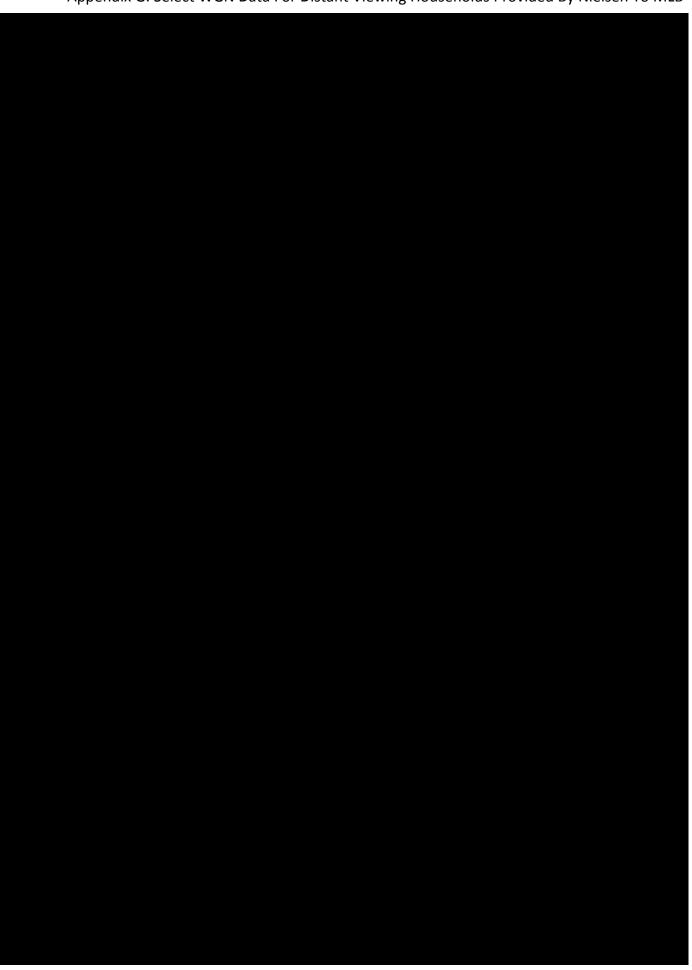


Appendix F: Average Distant Metrics for Sample Stations 2010-13

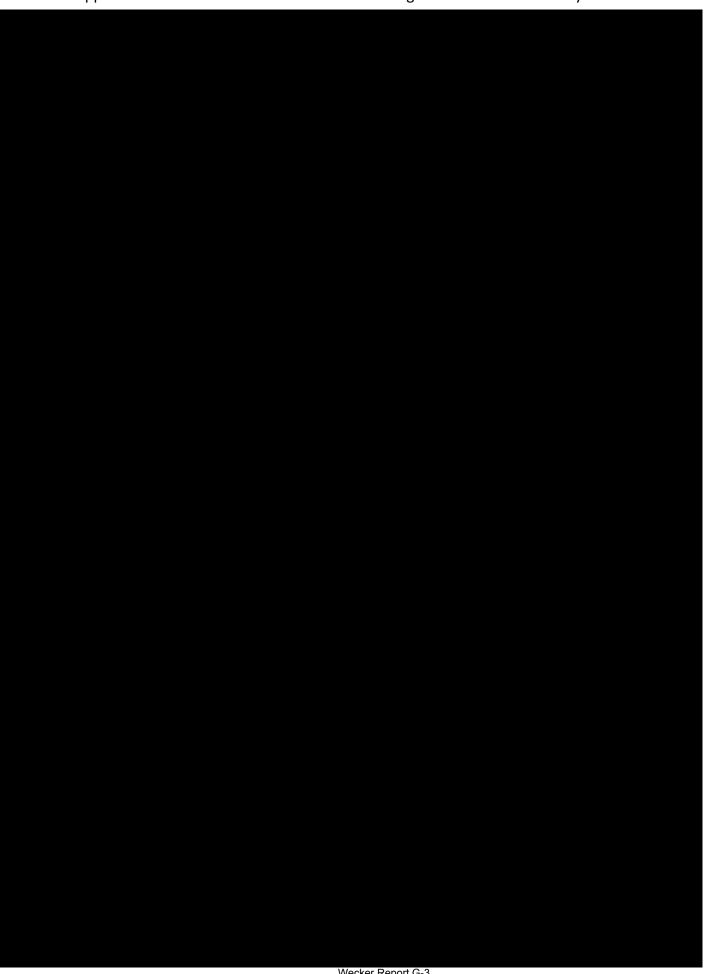


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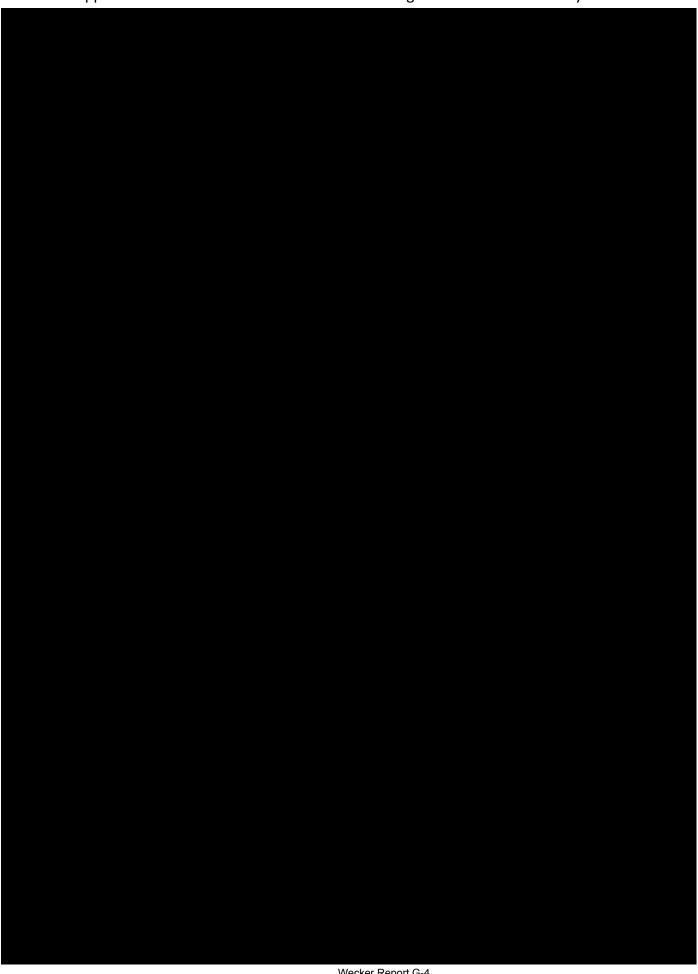




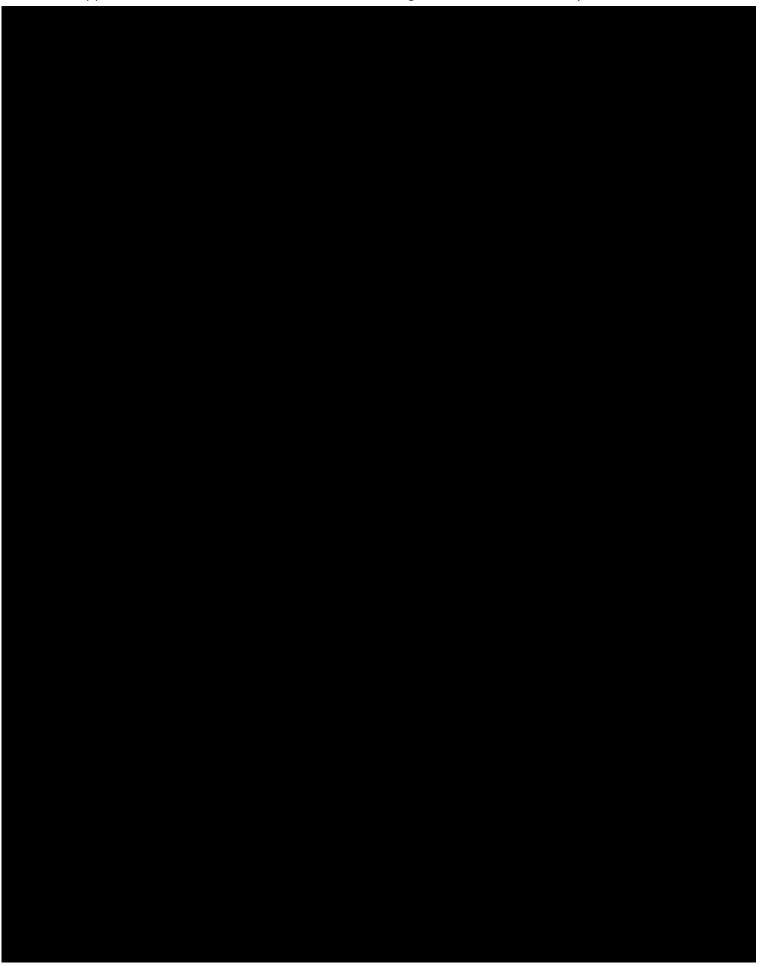
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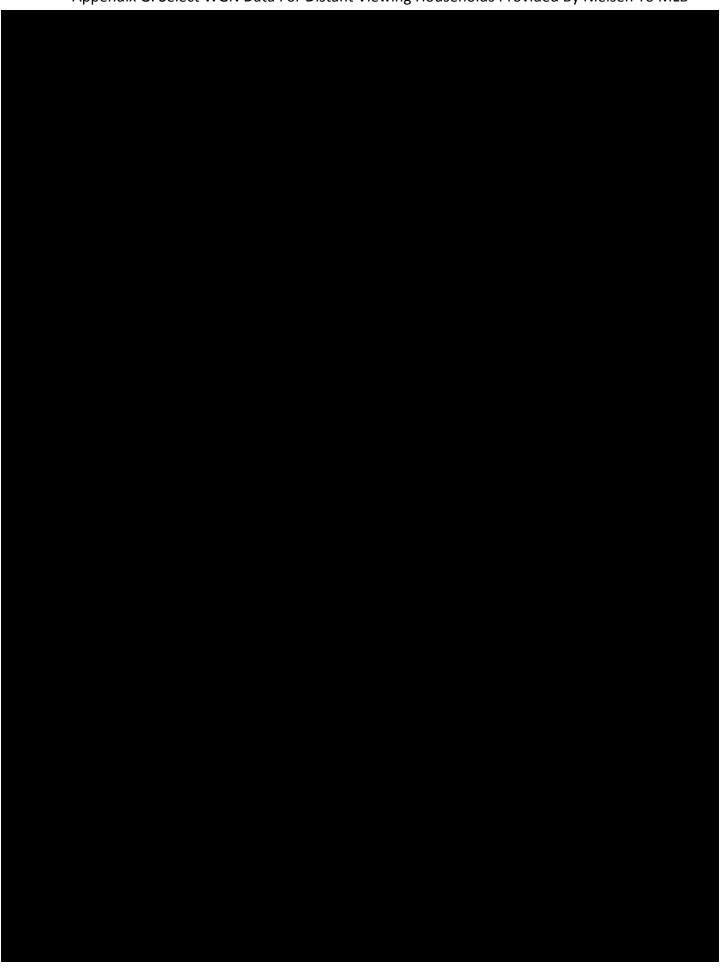


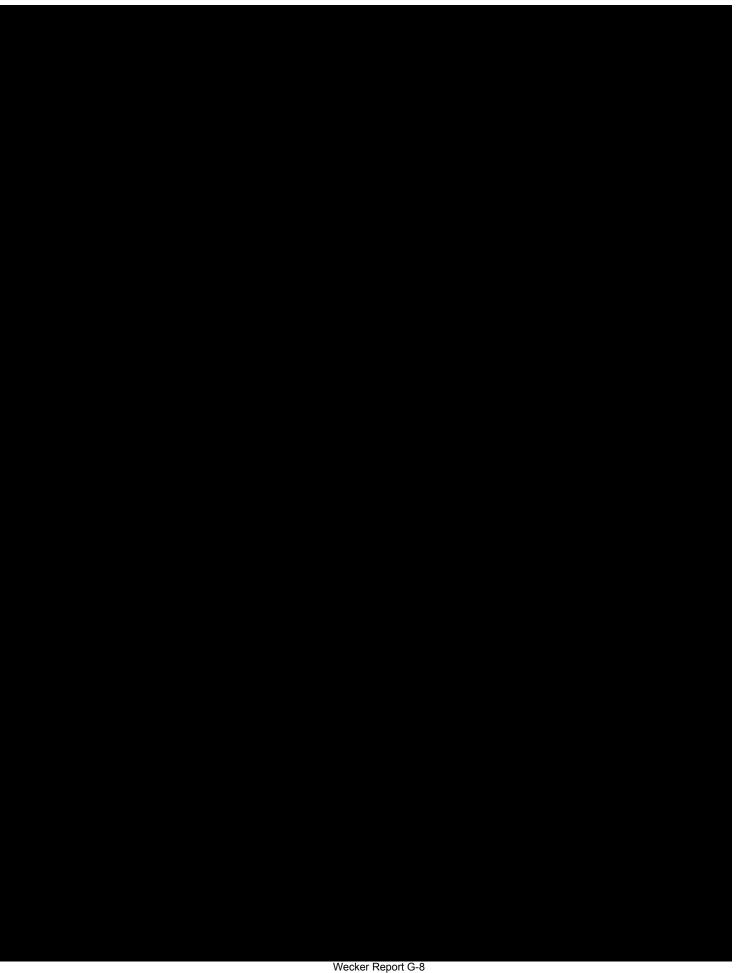
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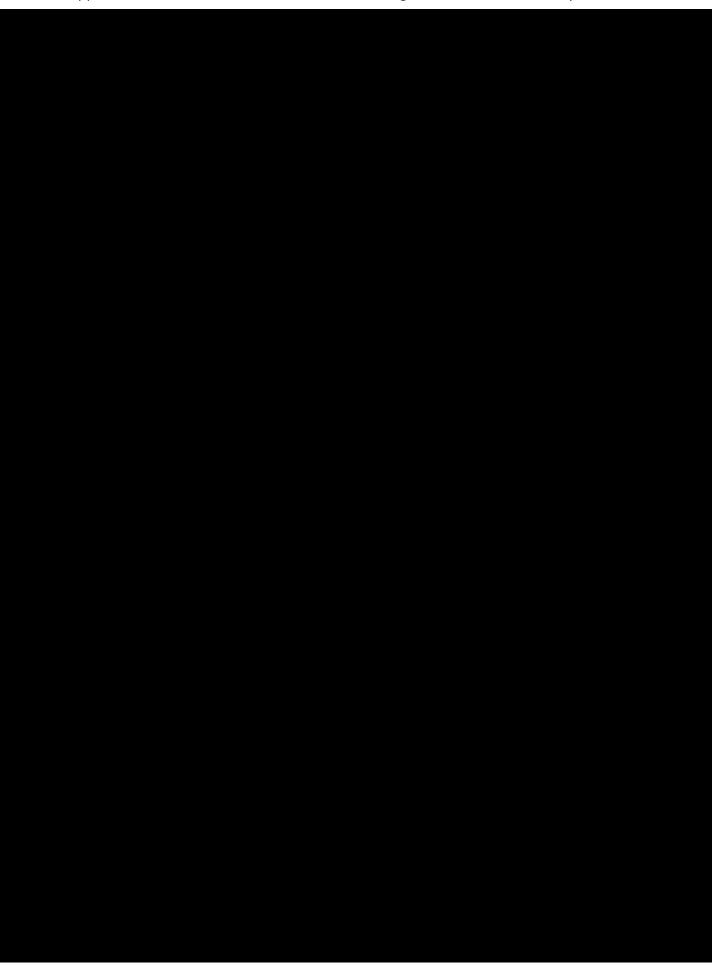


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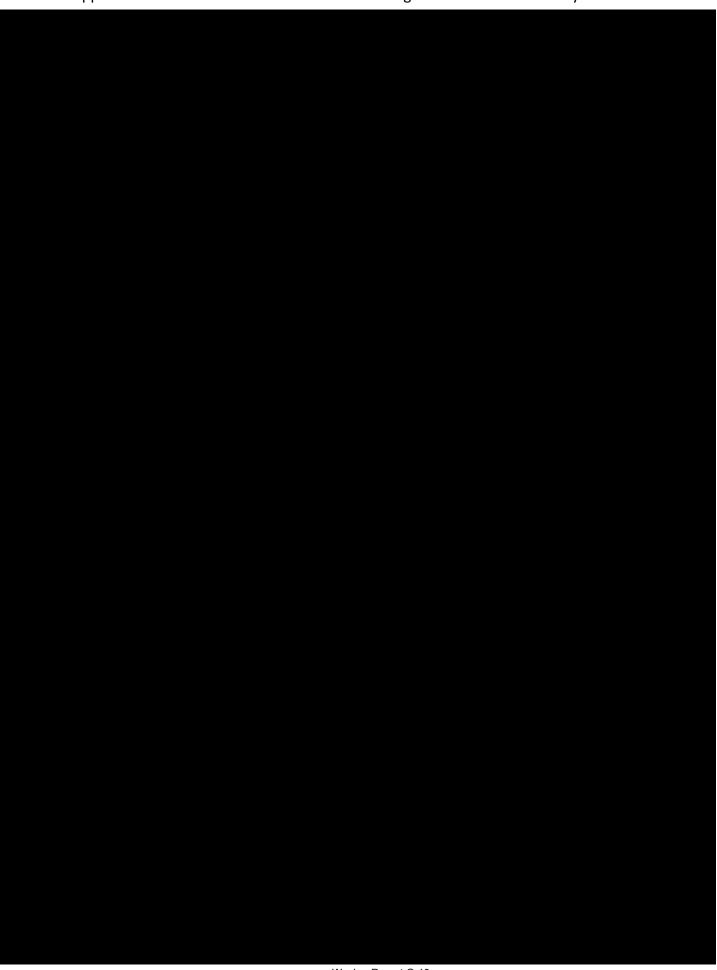


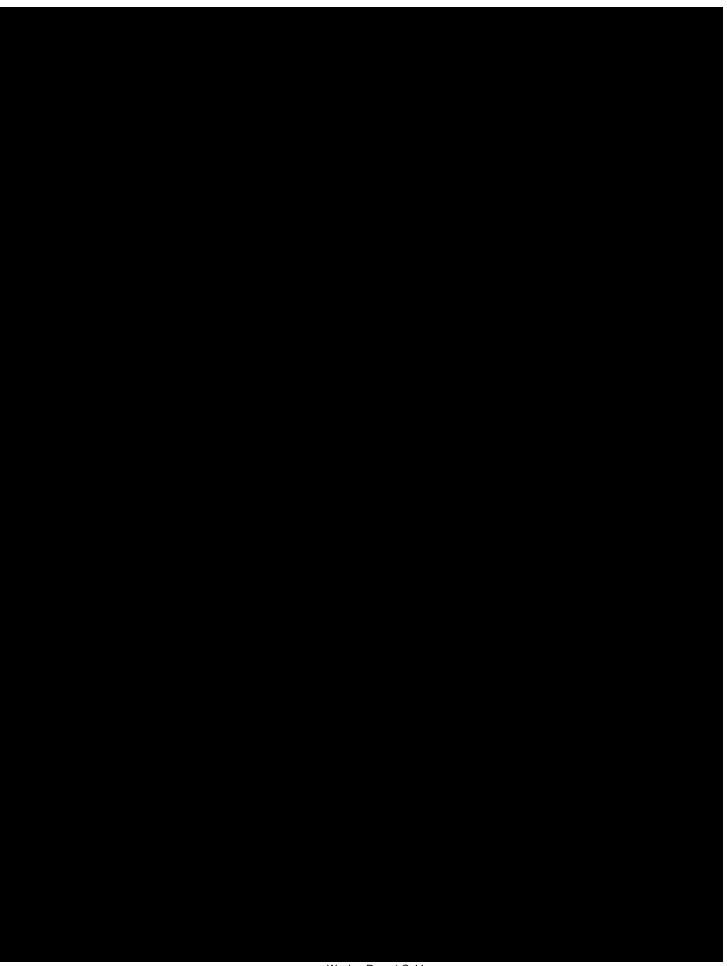




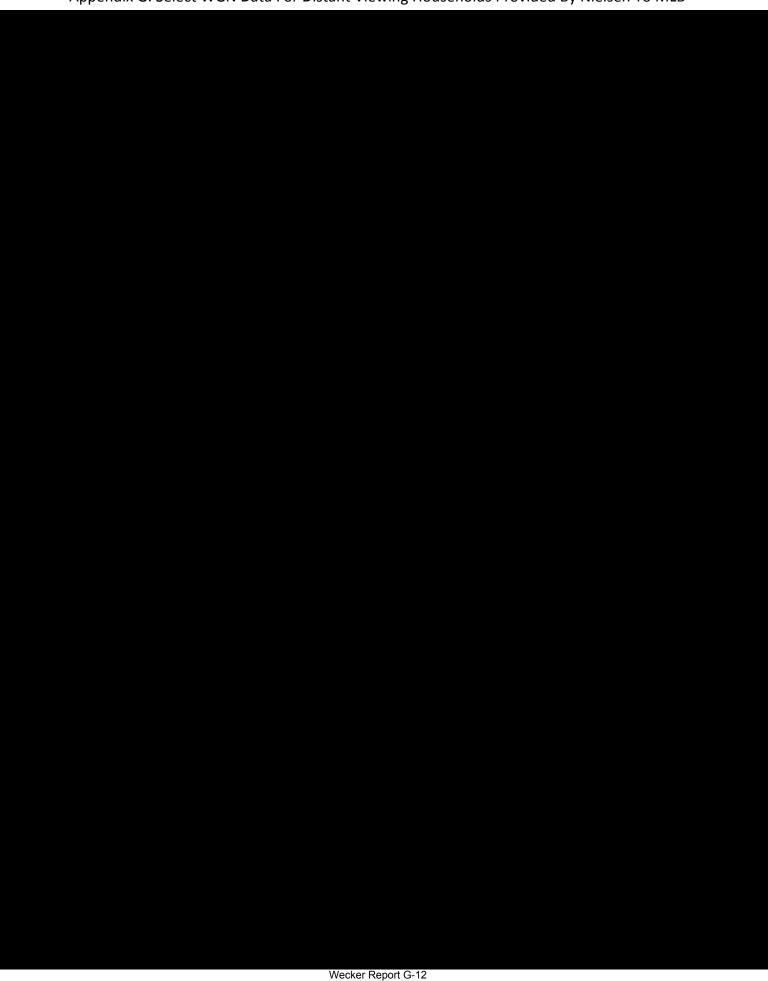


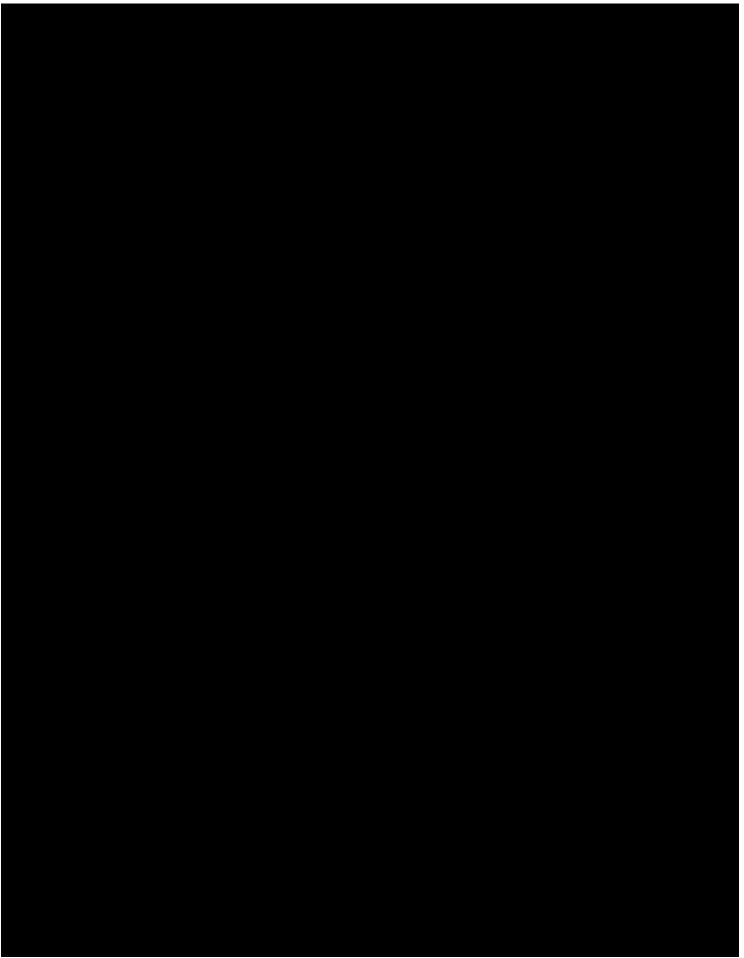
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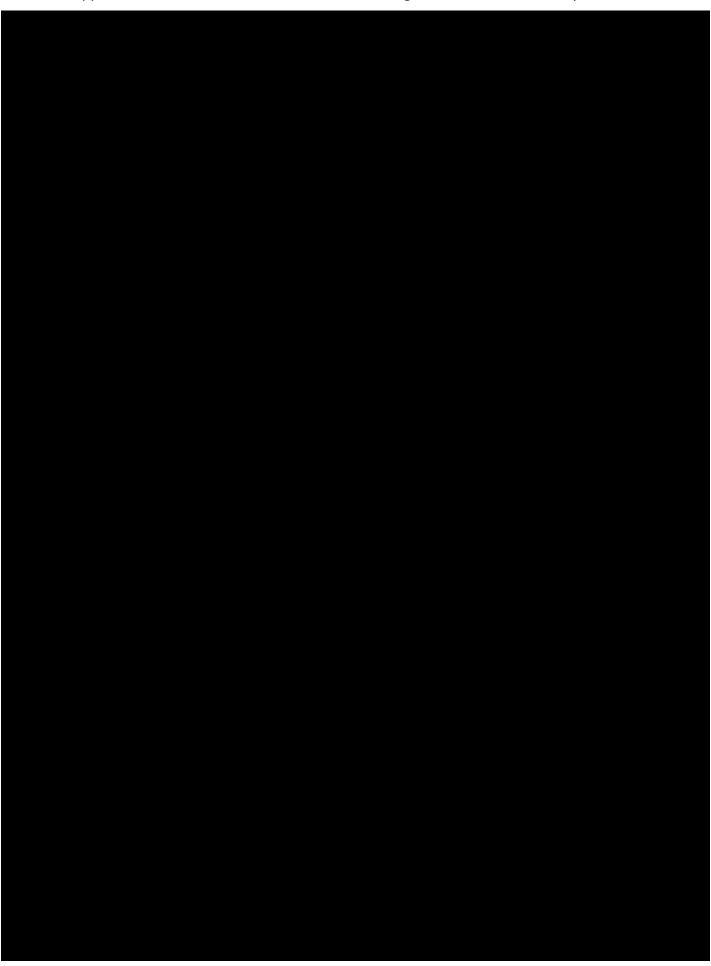




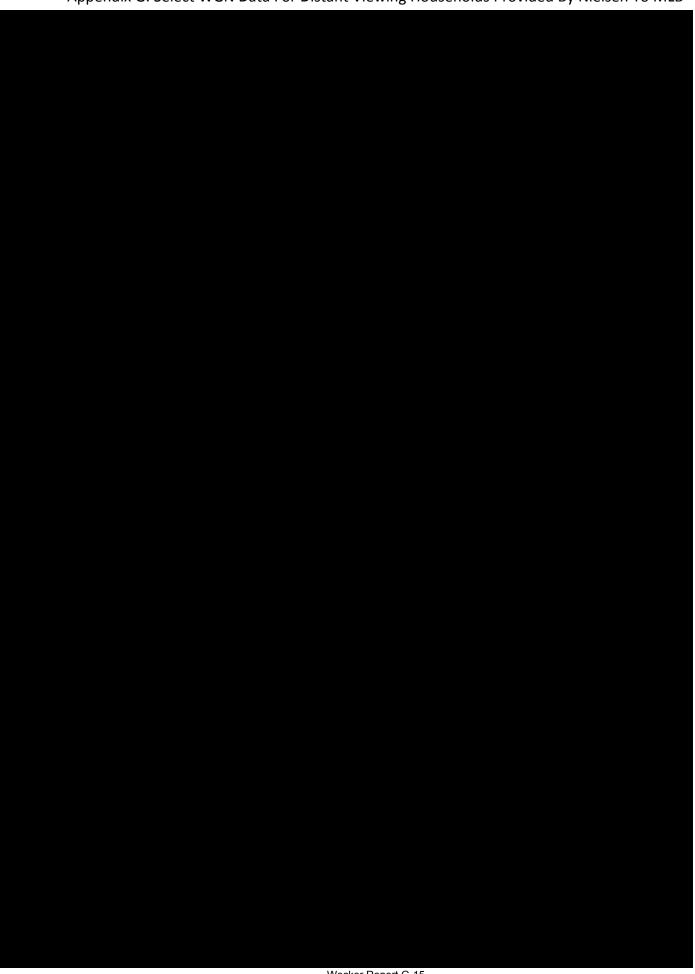
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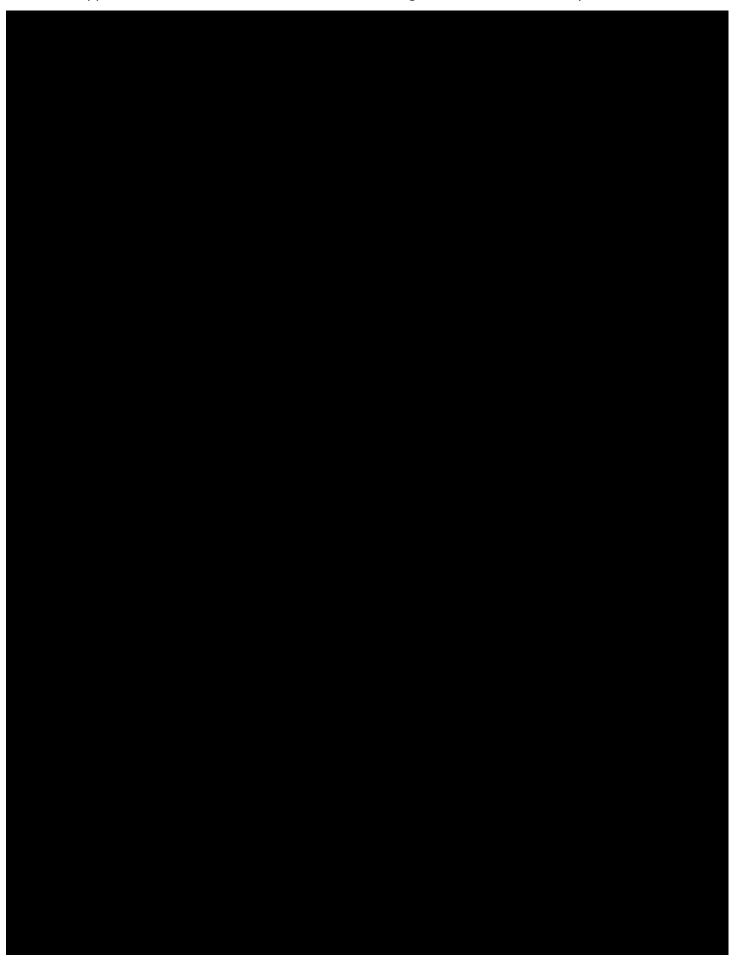




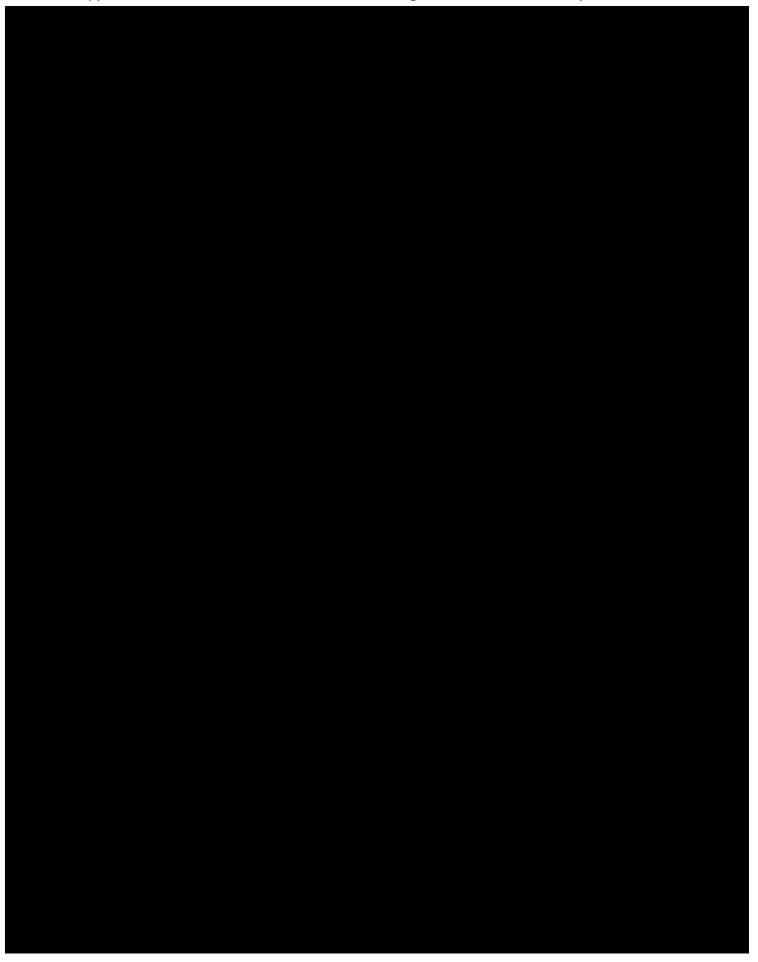


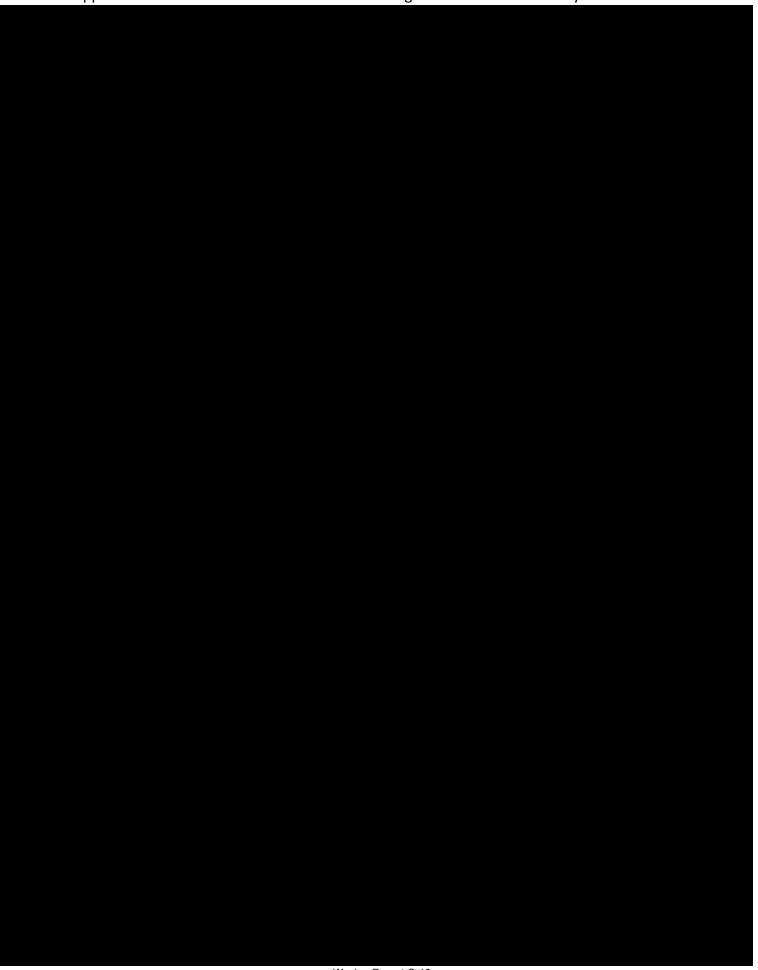
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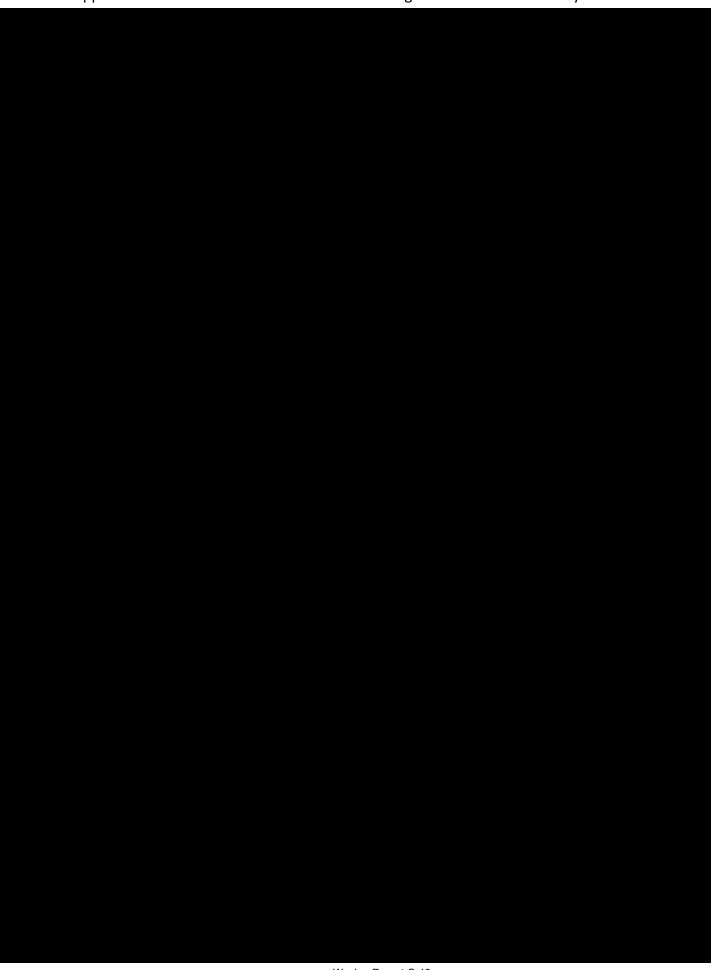


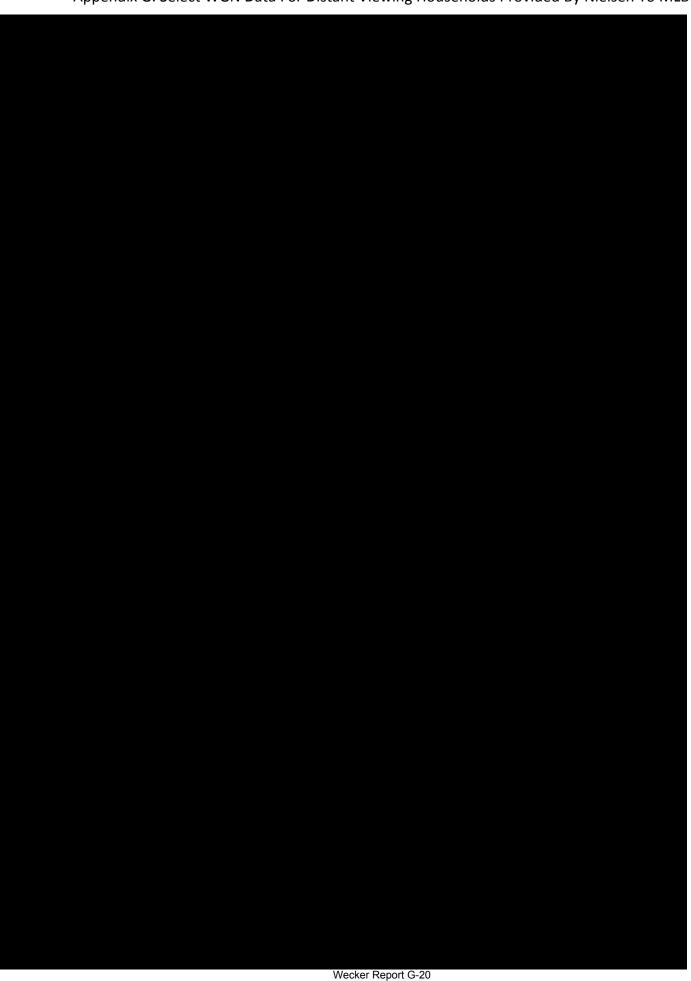


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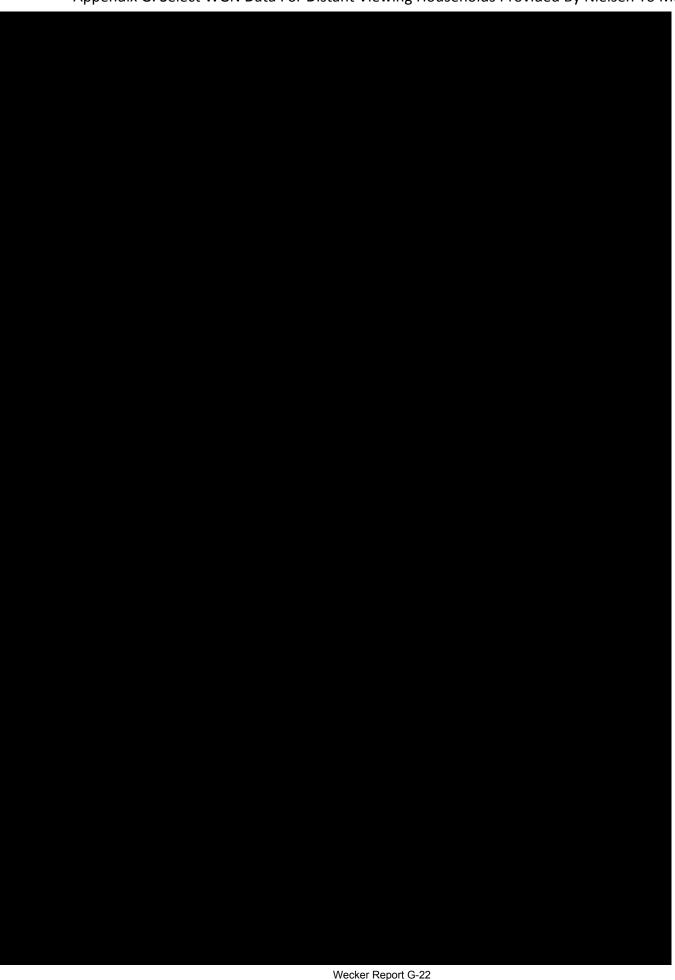


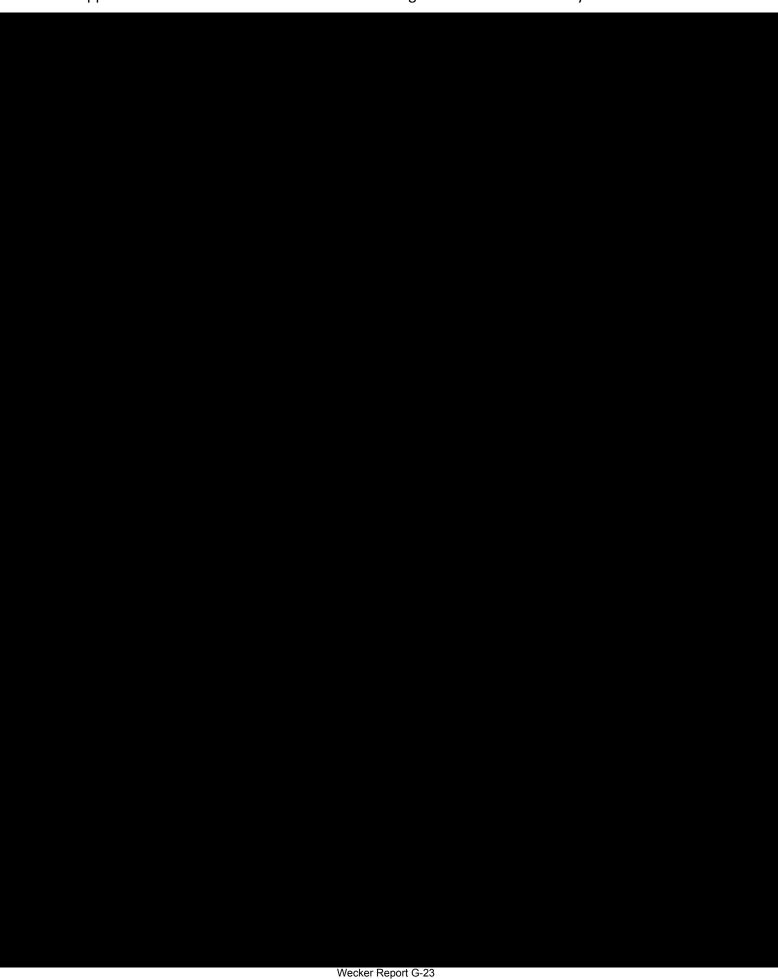


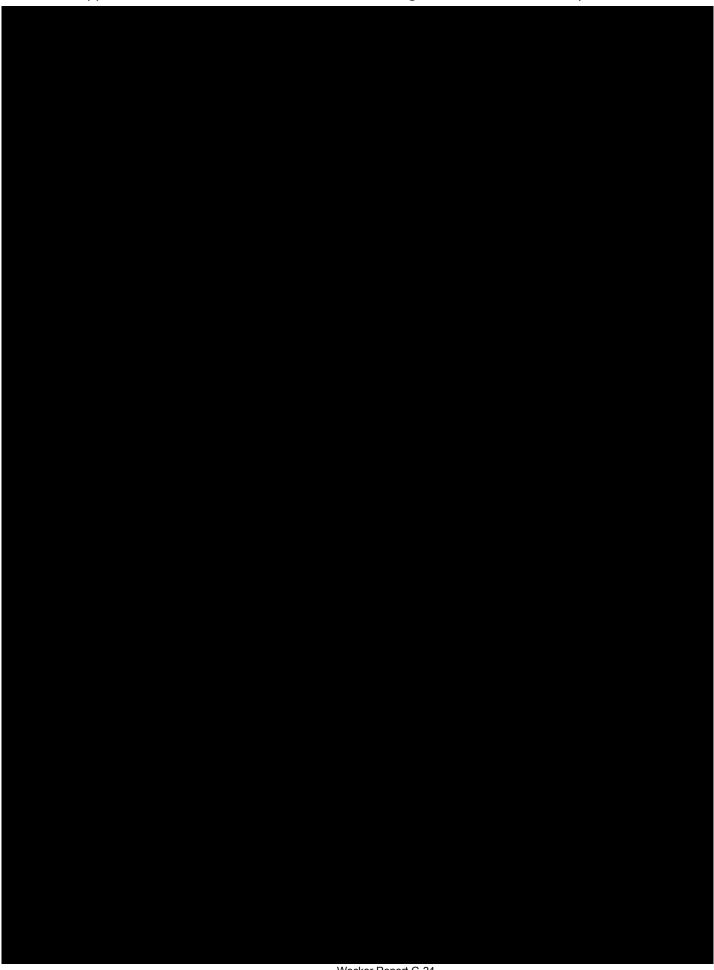


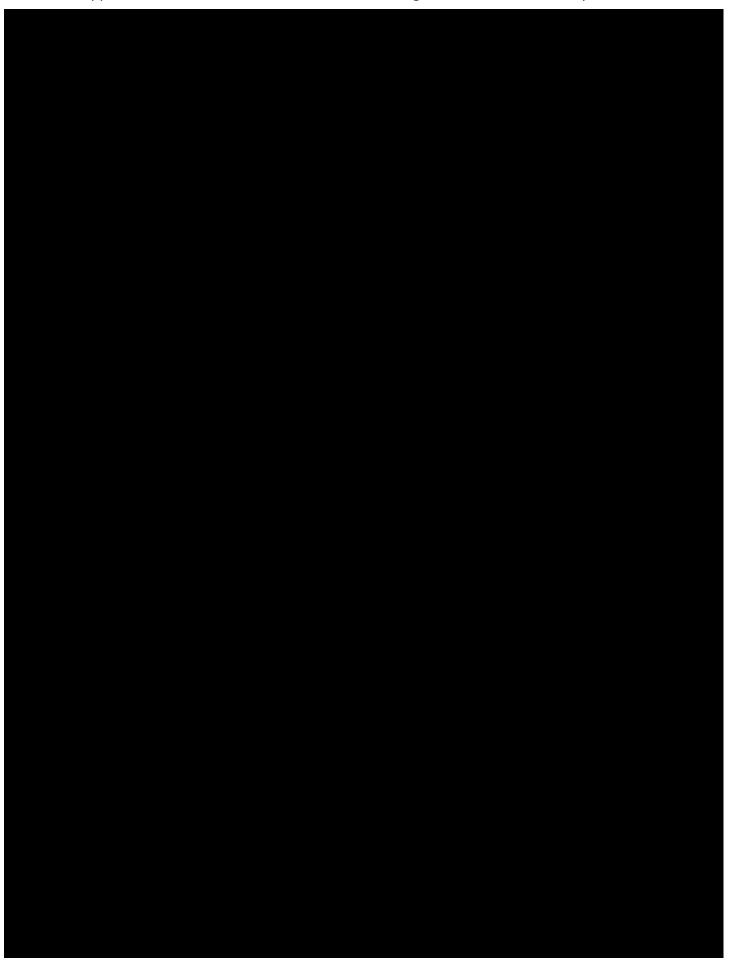


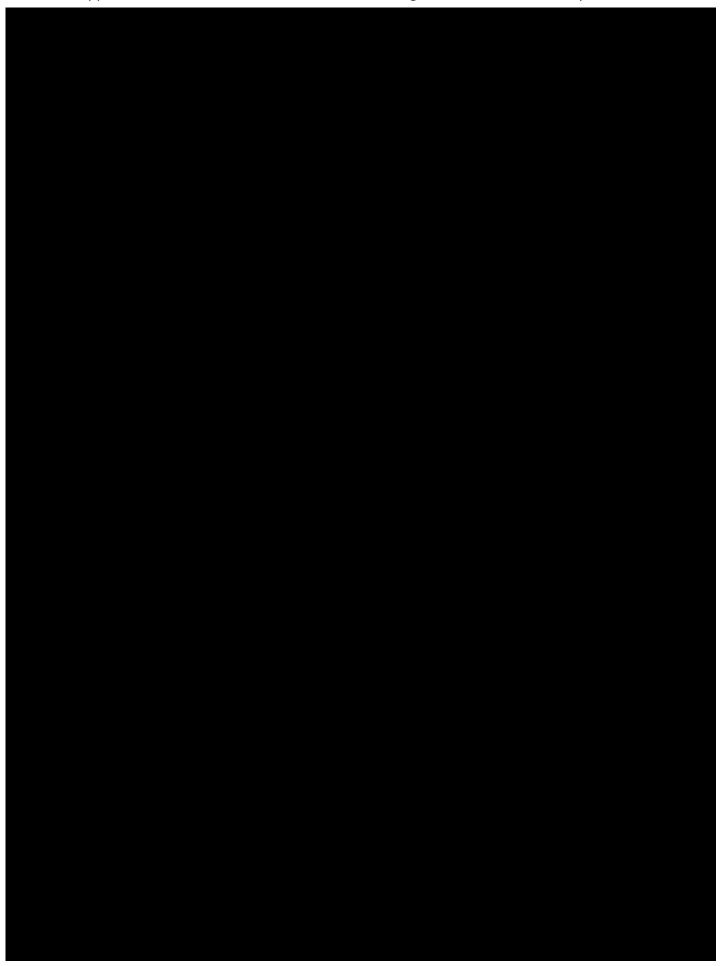


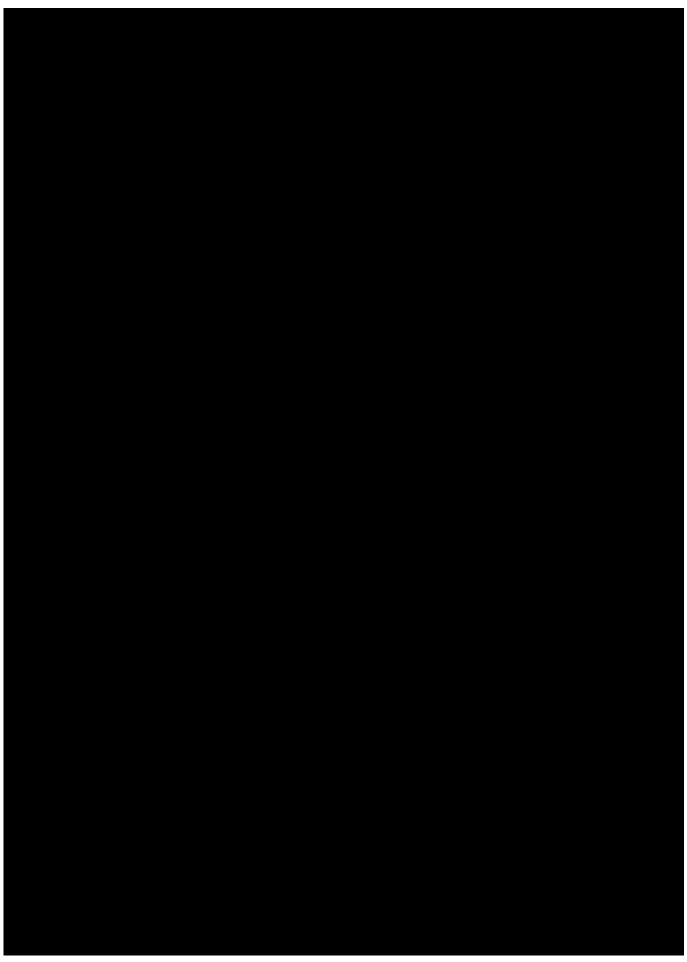


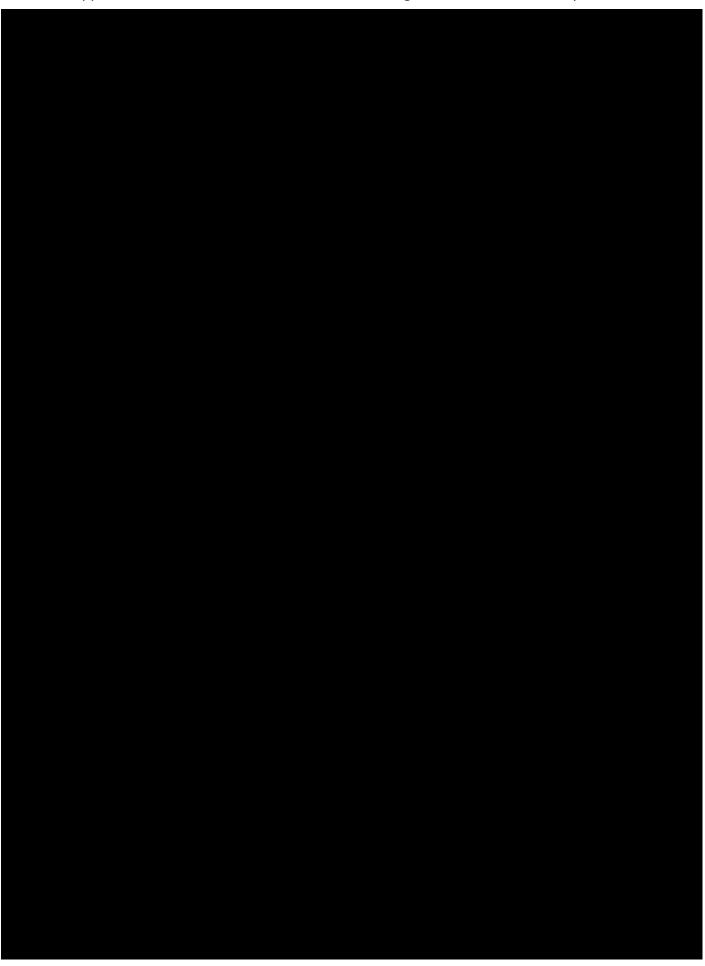


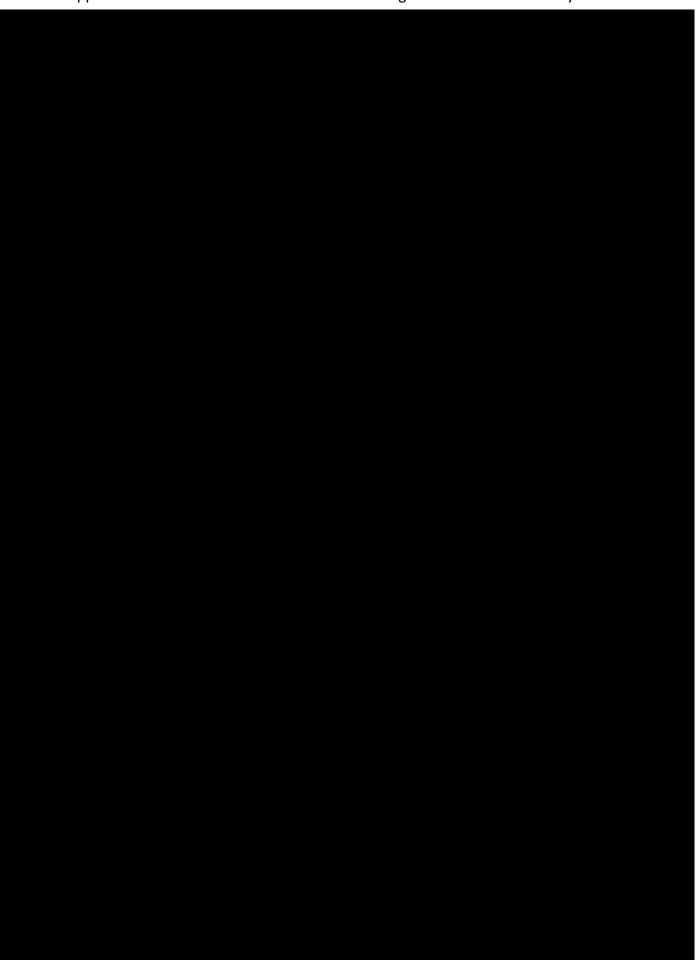




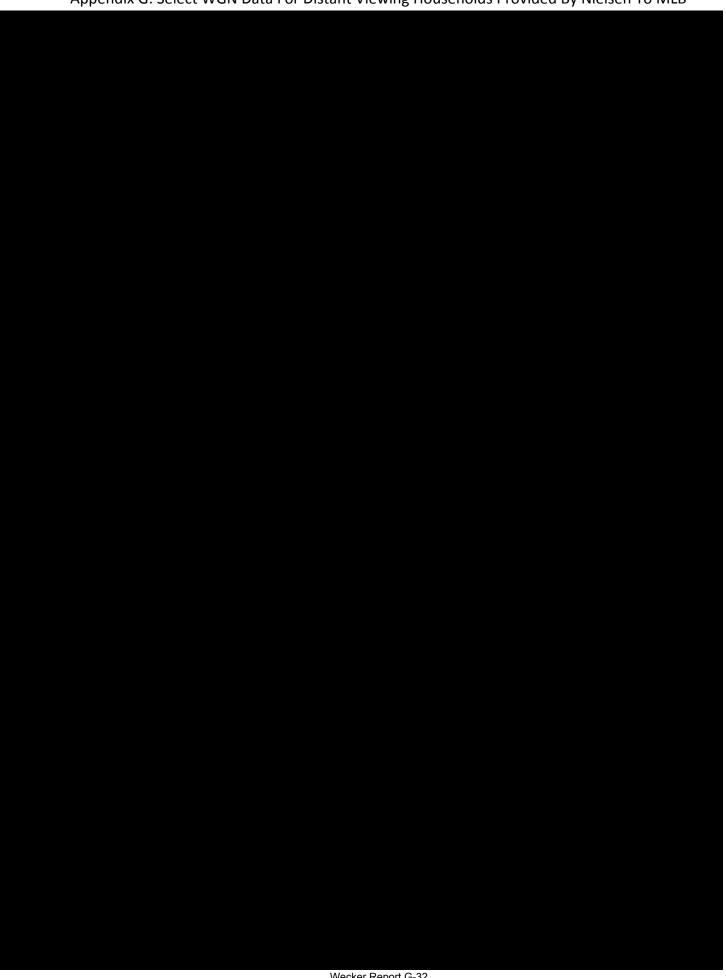


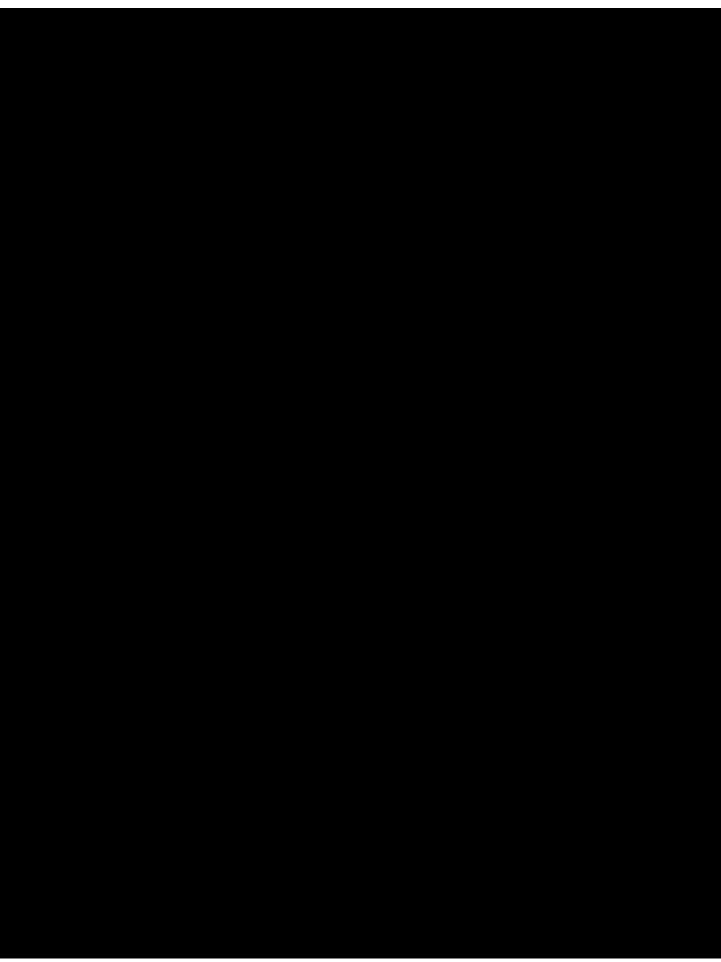


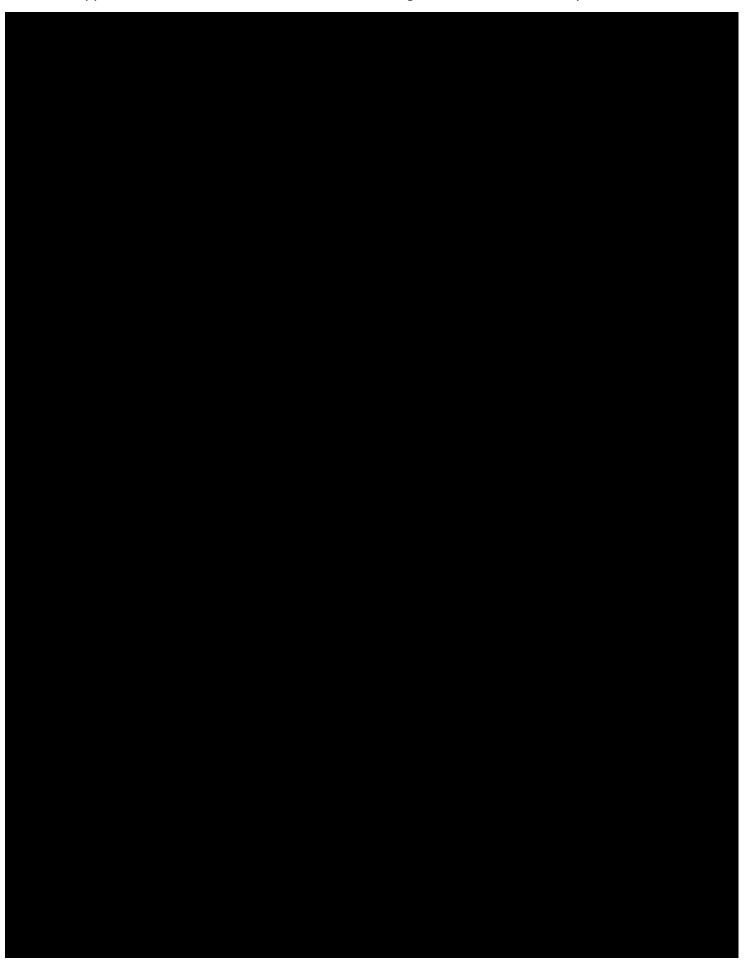


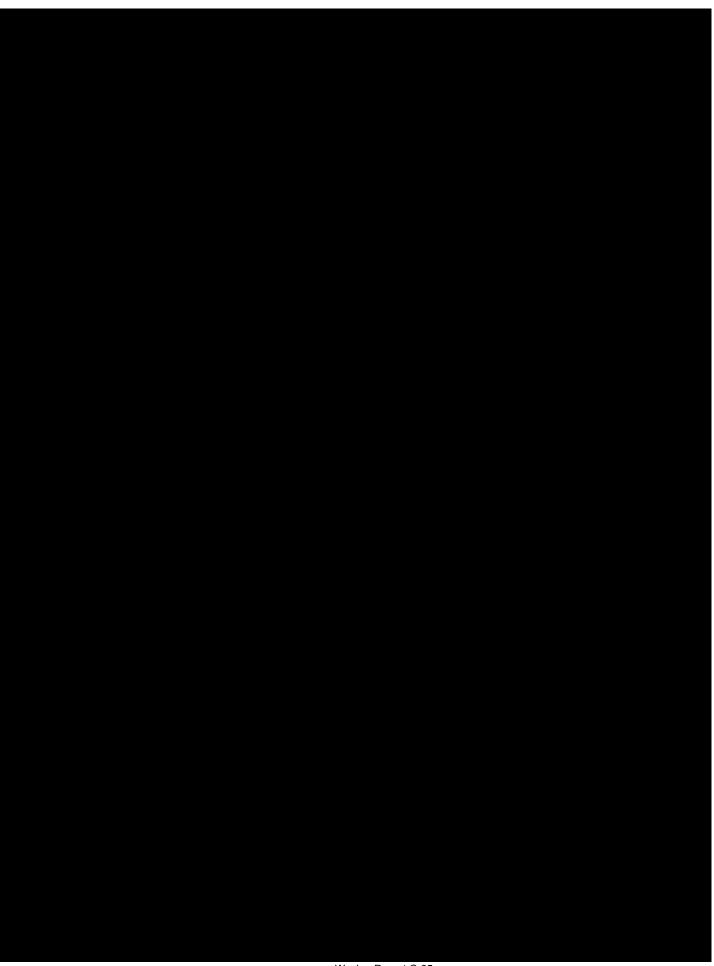


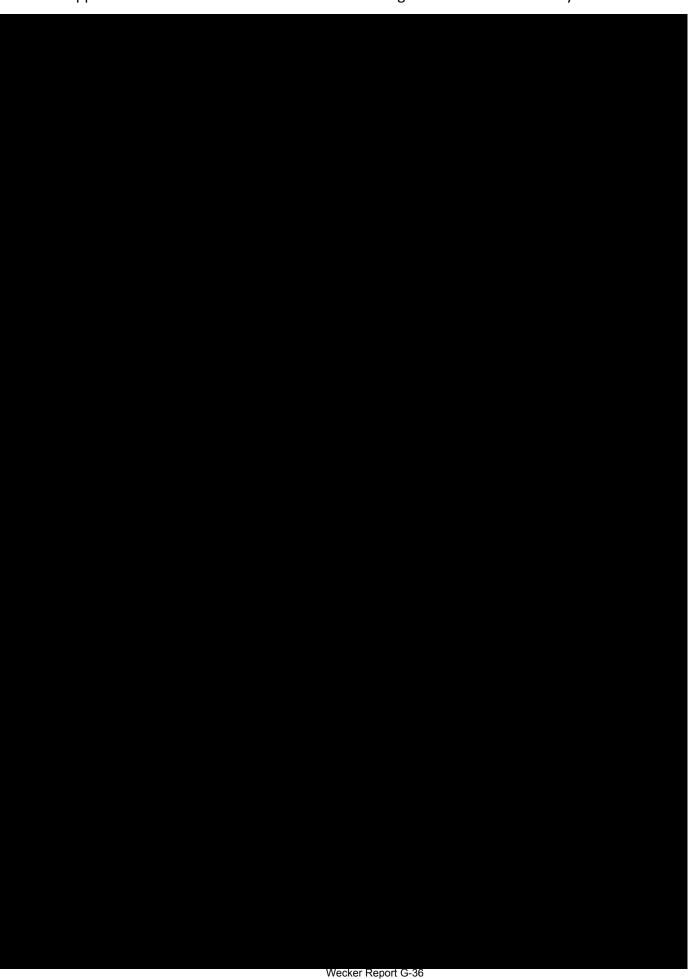


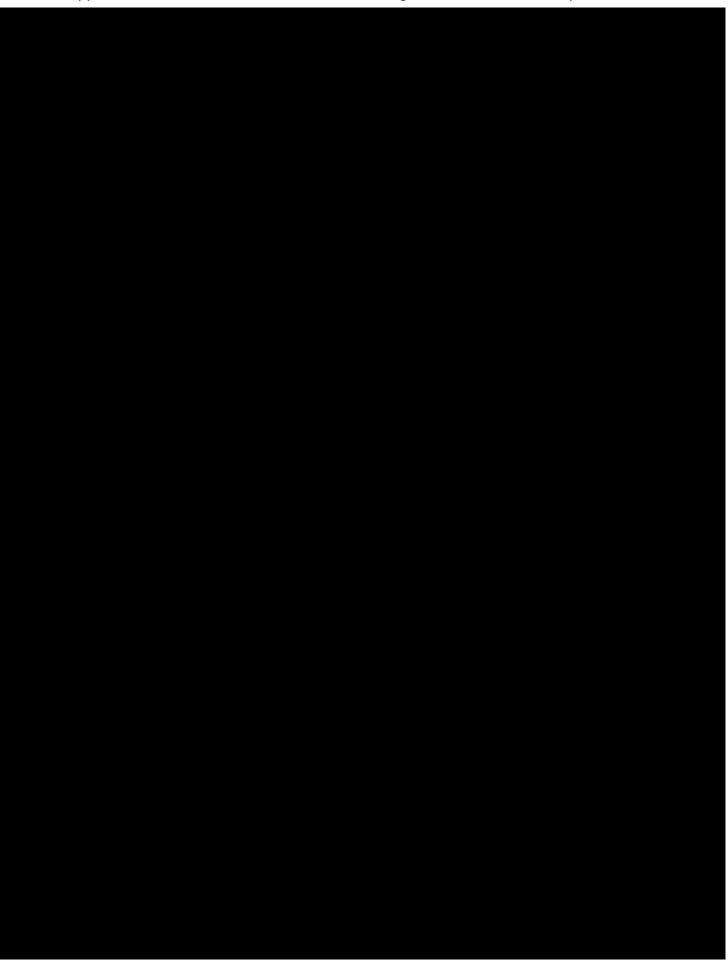


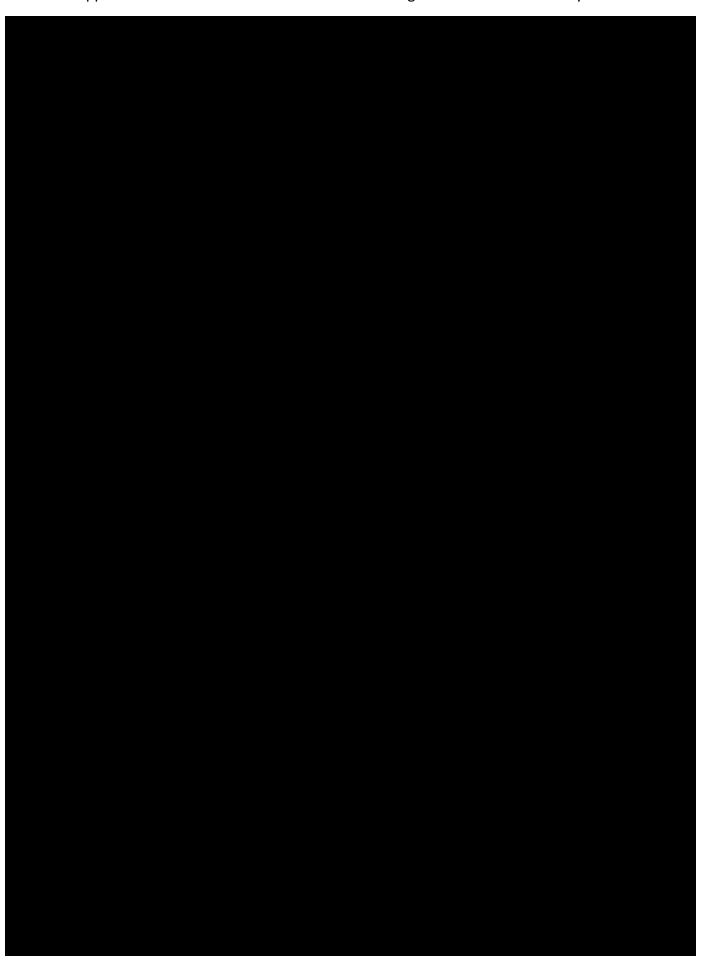


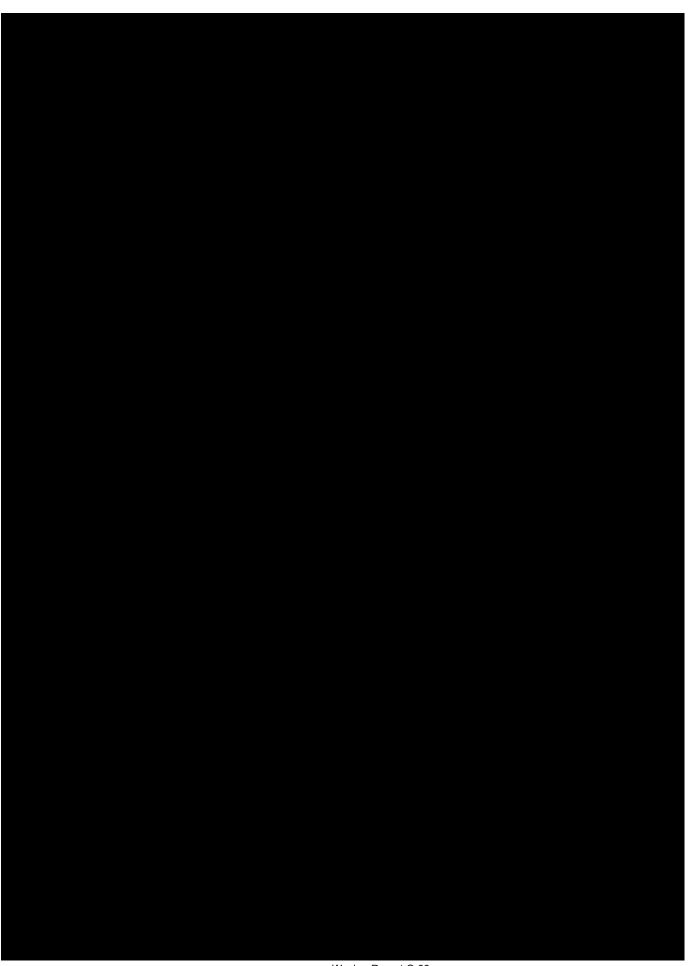


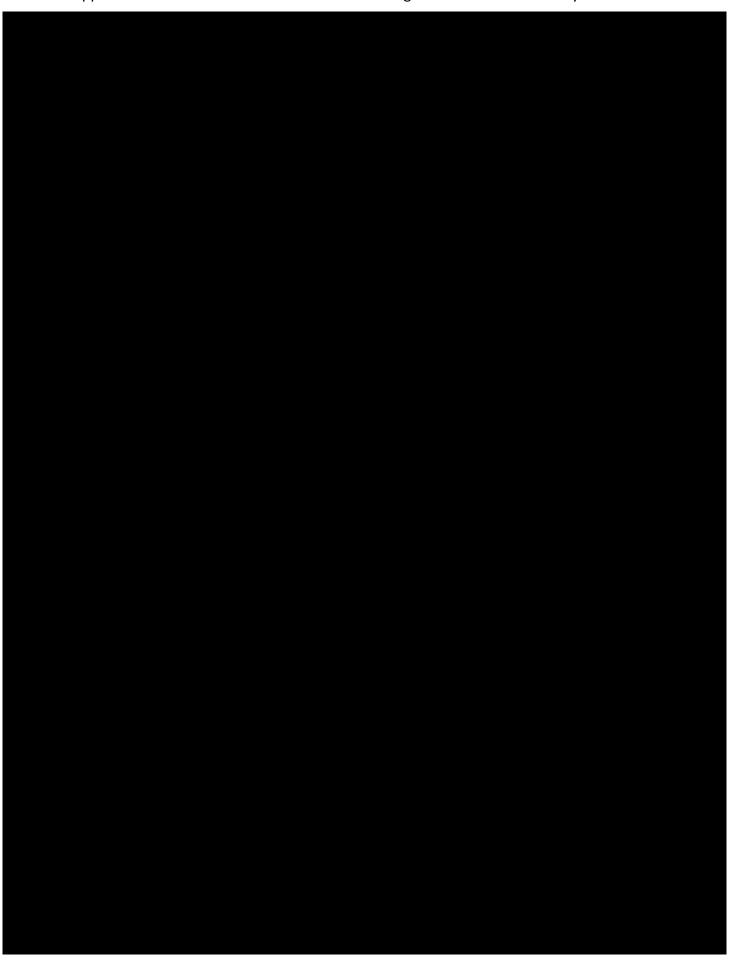


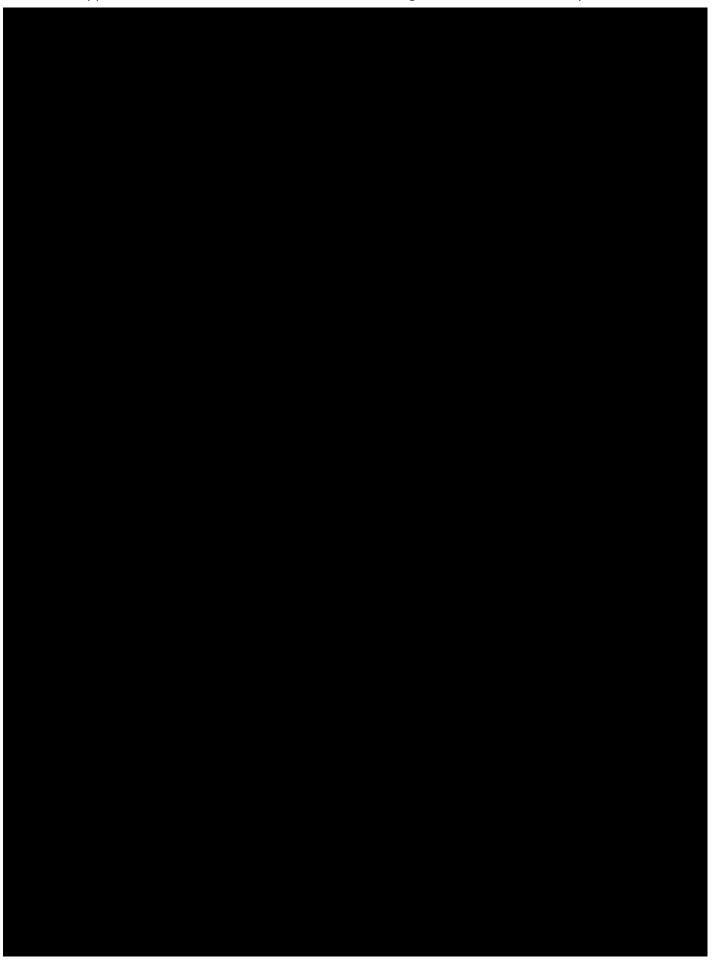


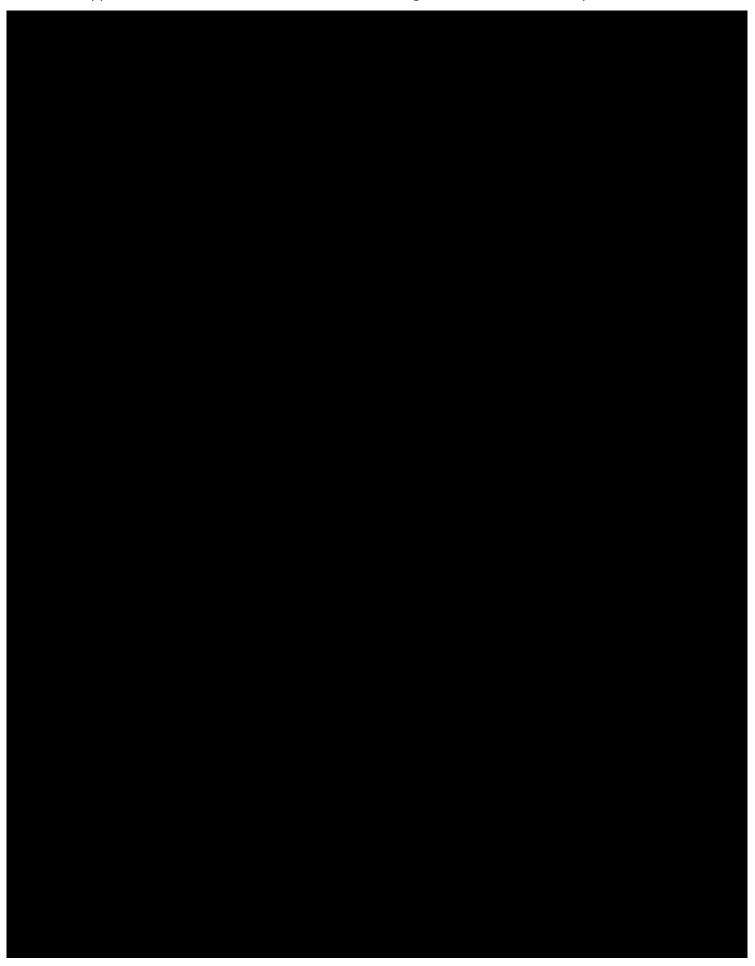


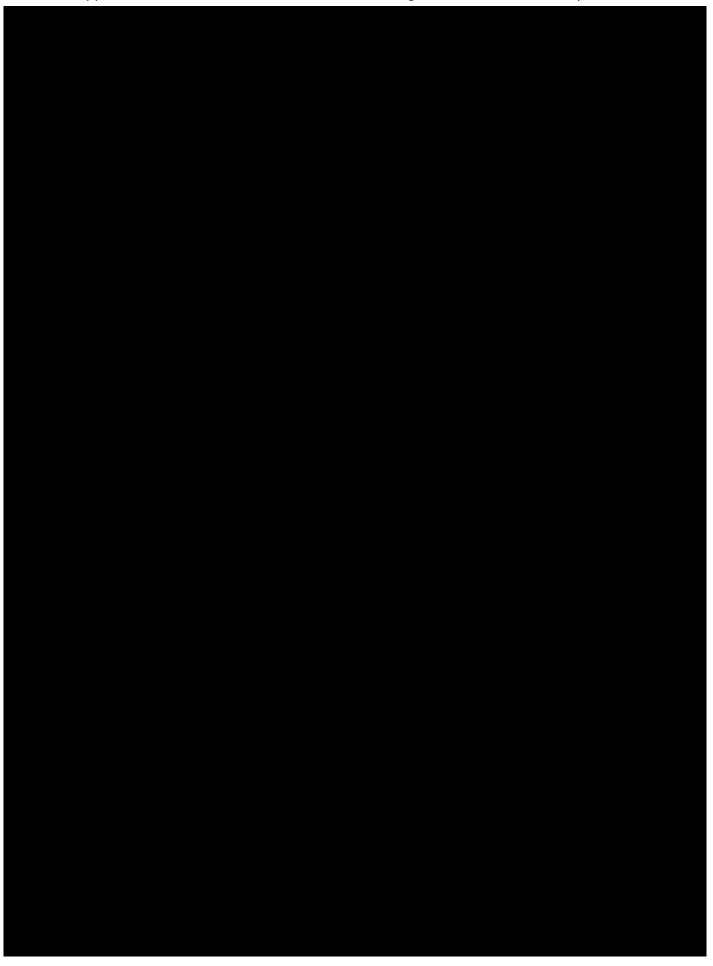


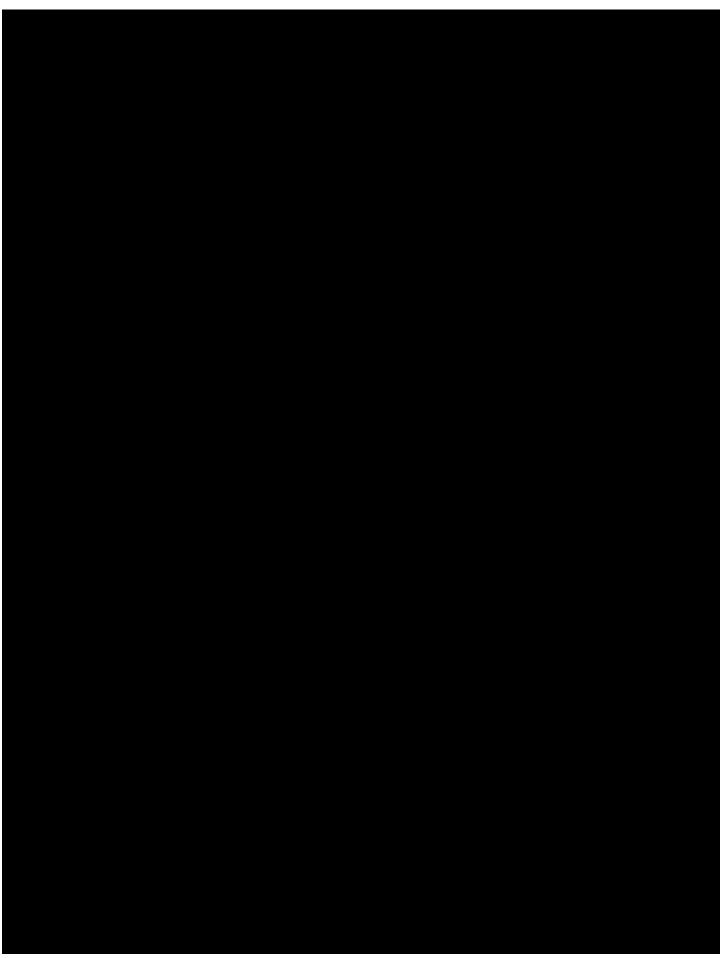


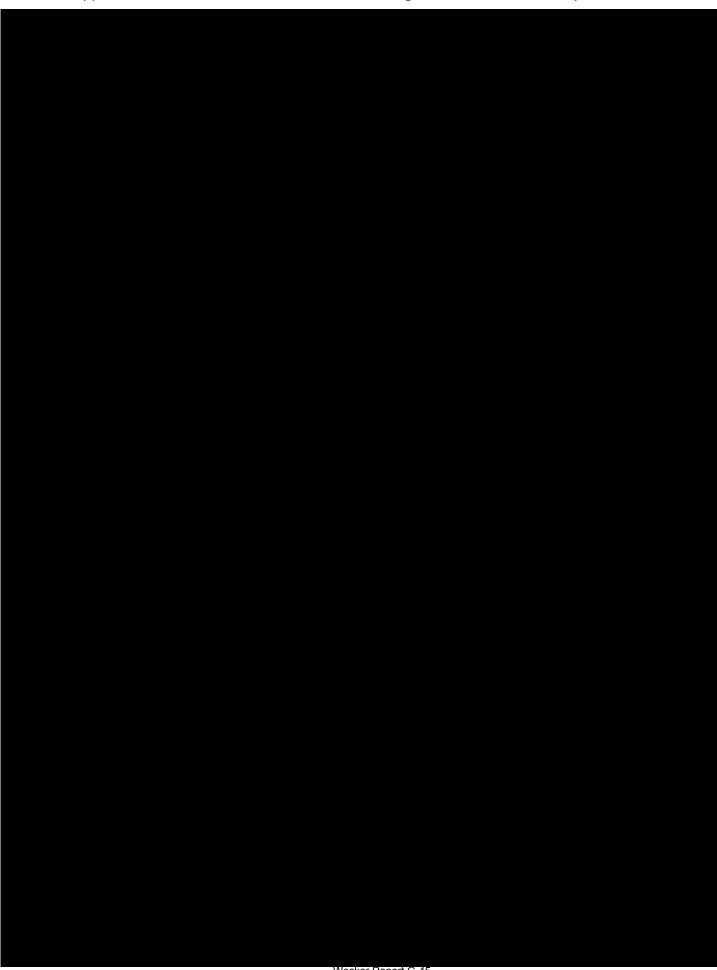




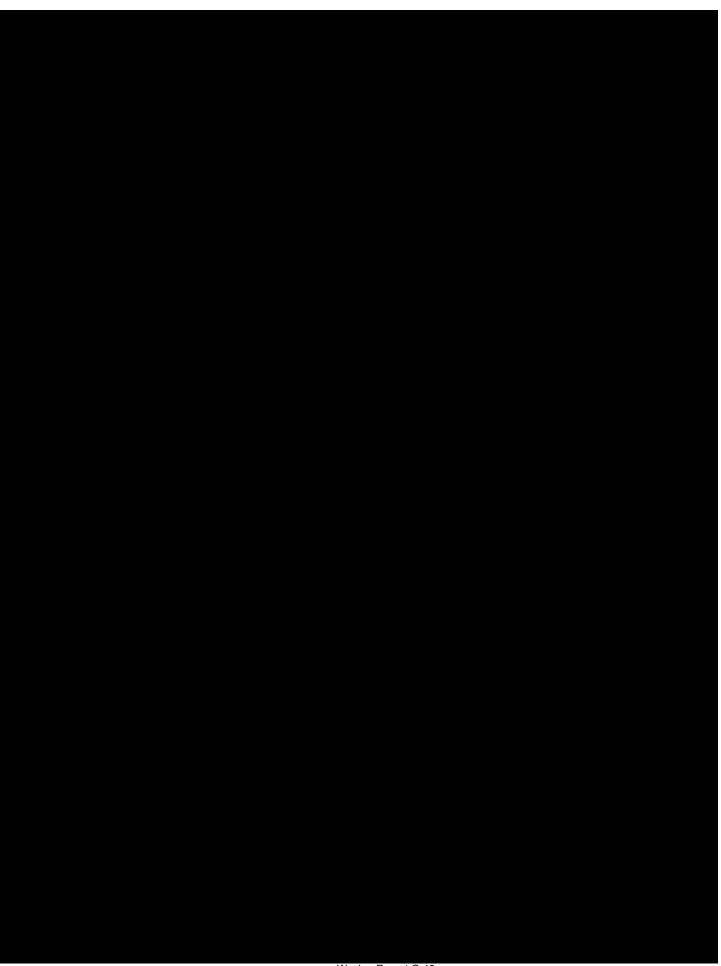


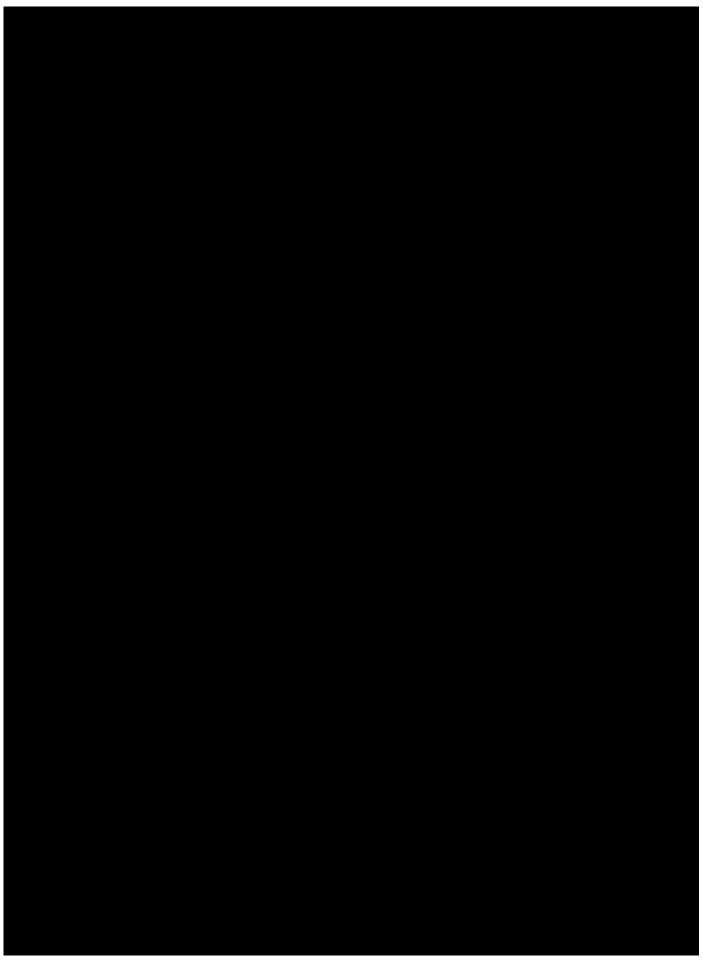




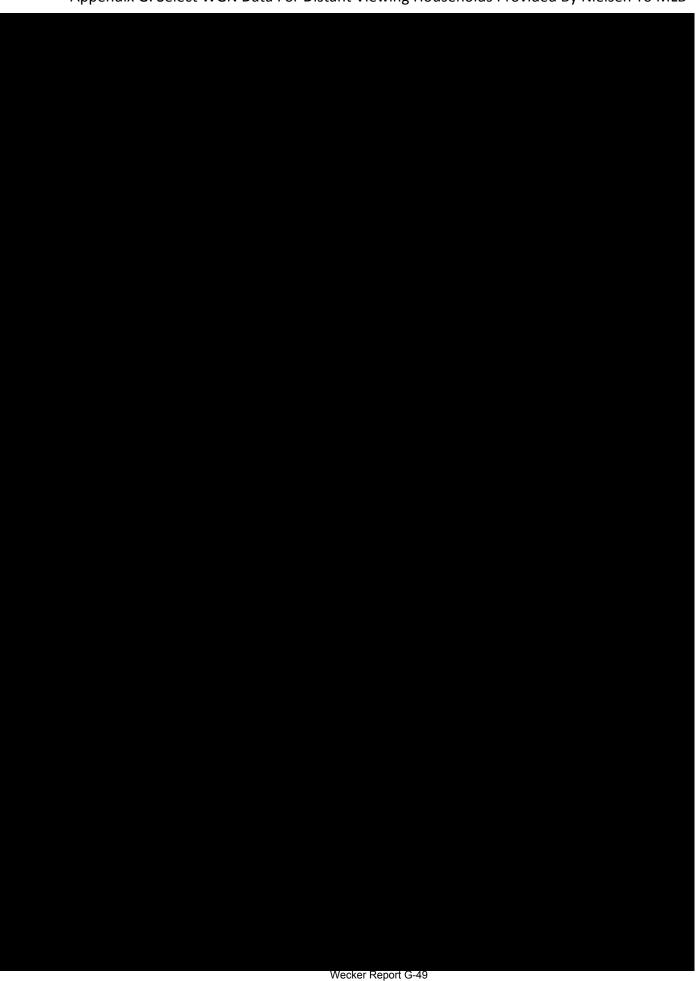


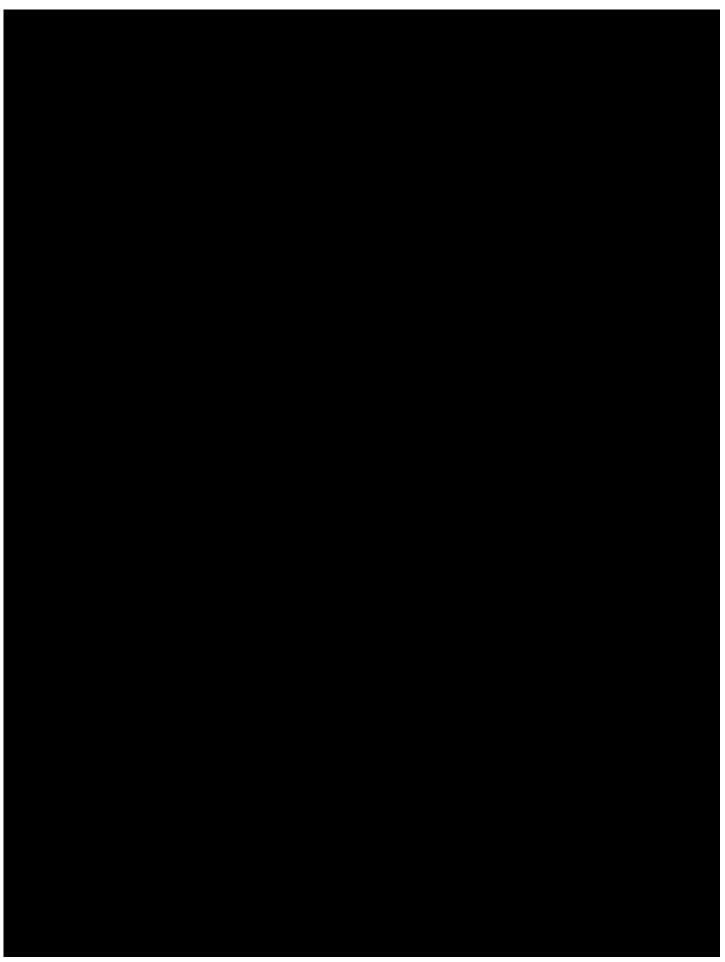
Wecker Report G-45

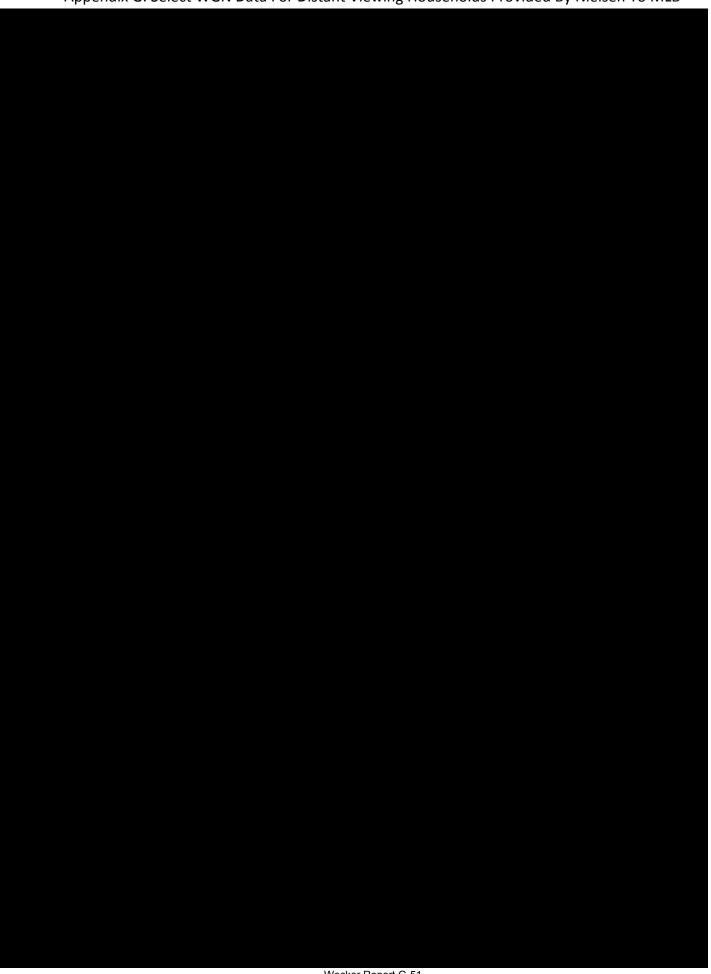


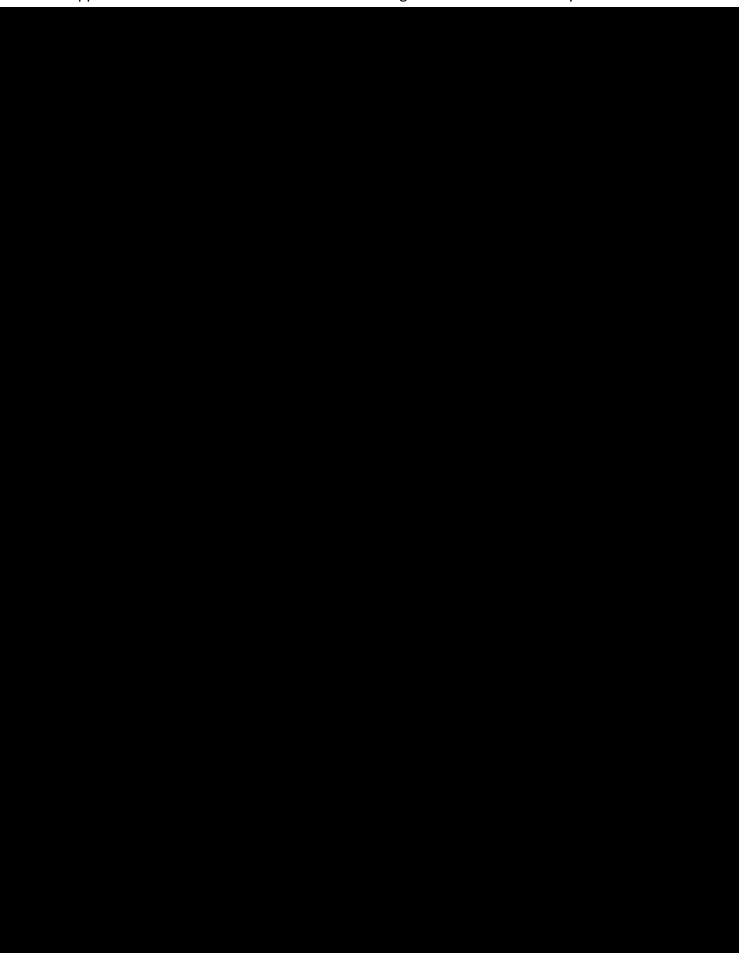


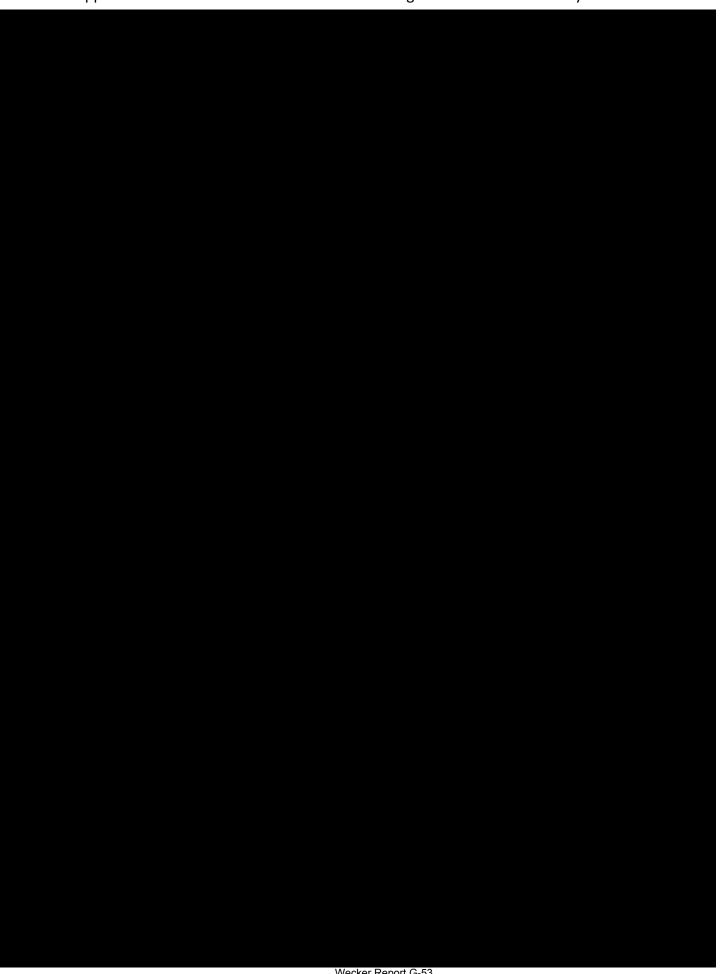


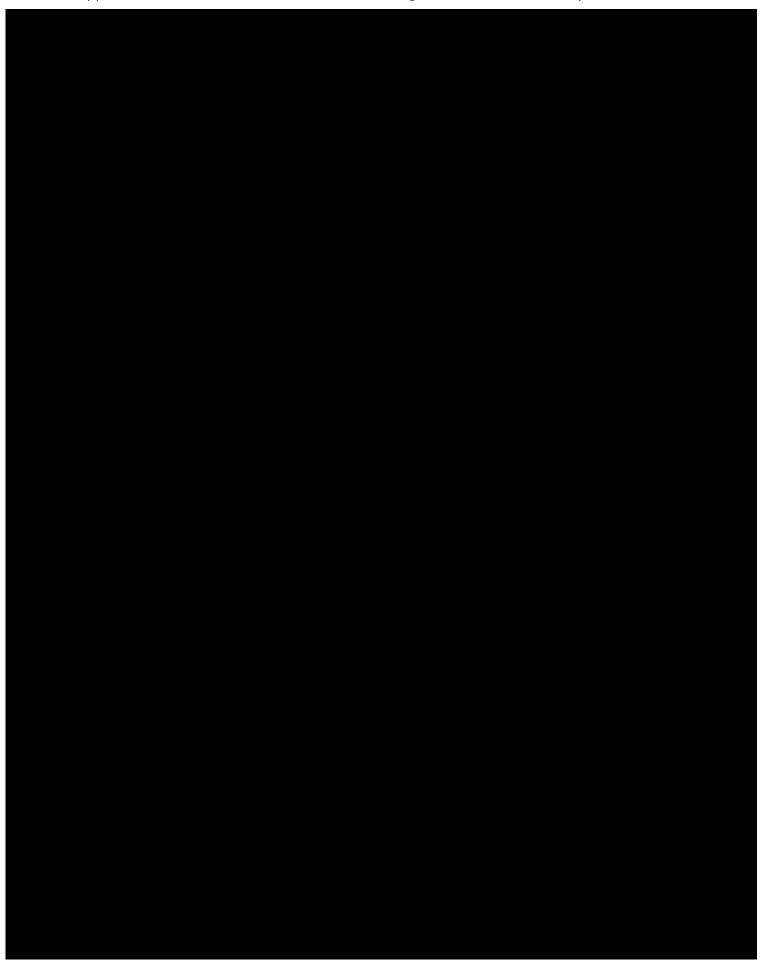


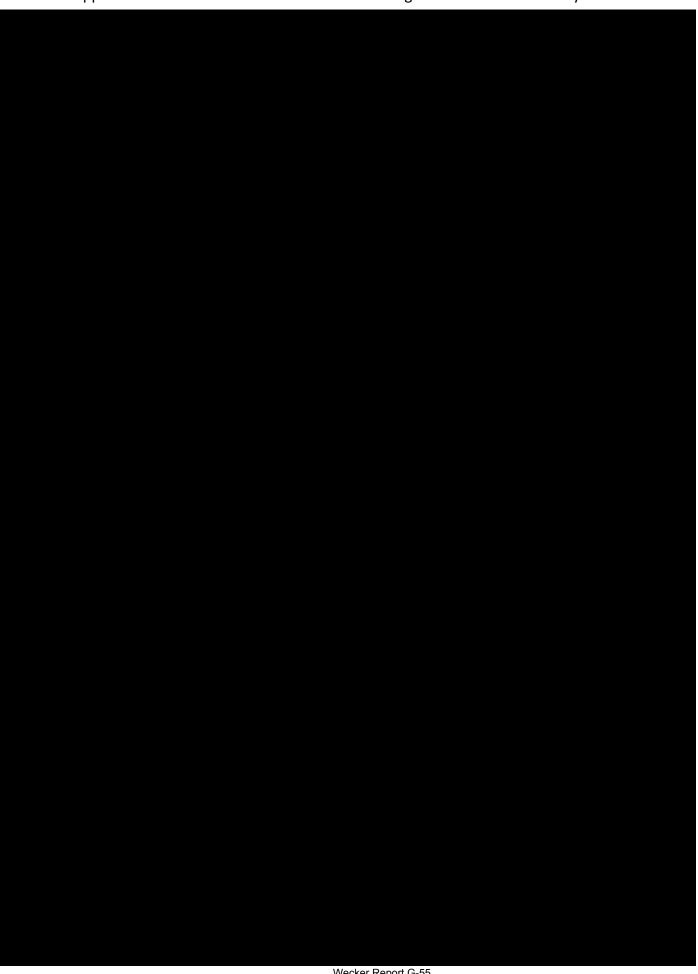


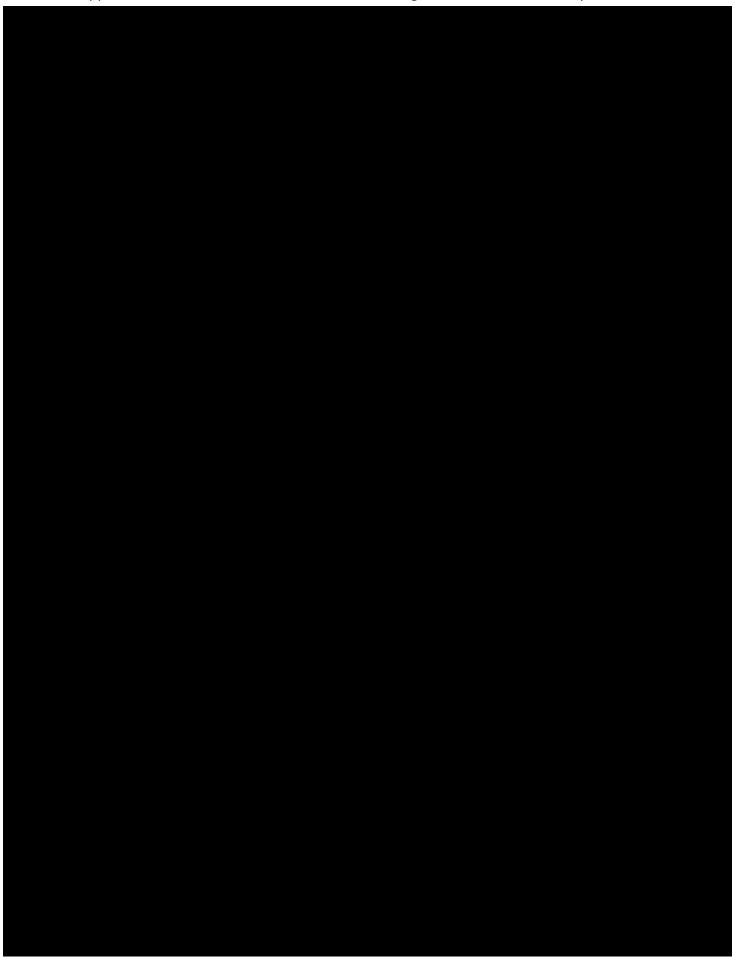


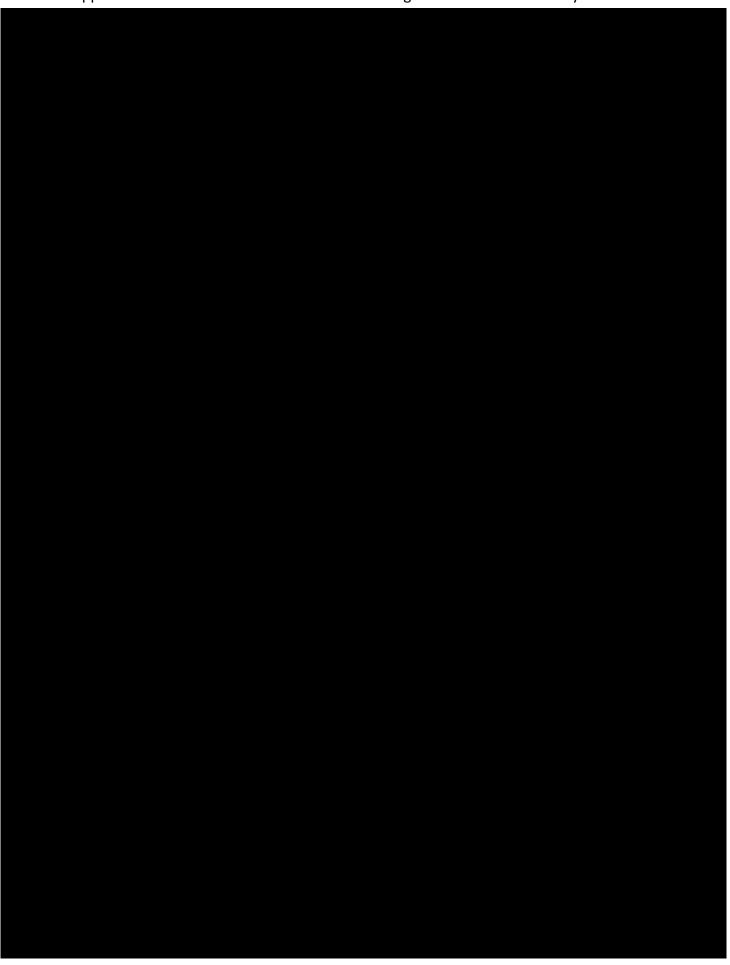




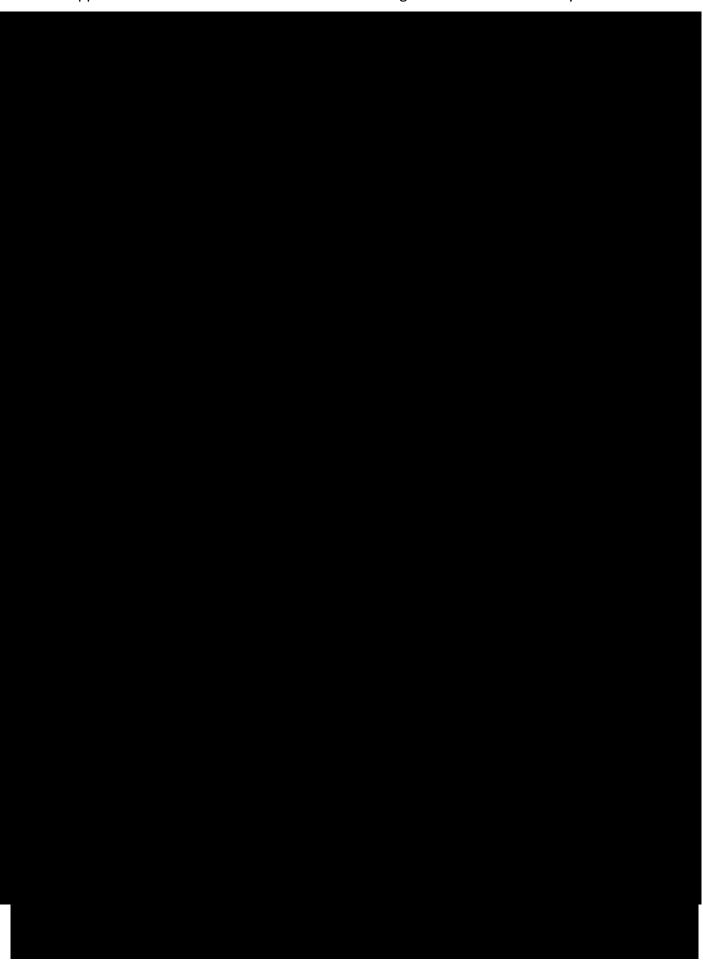


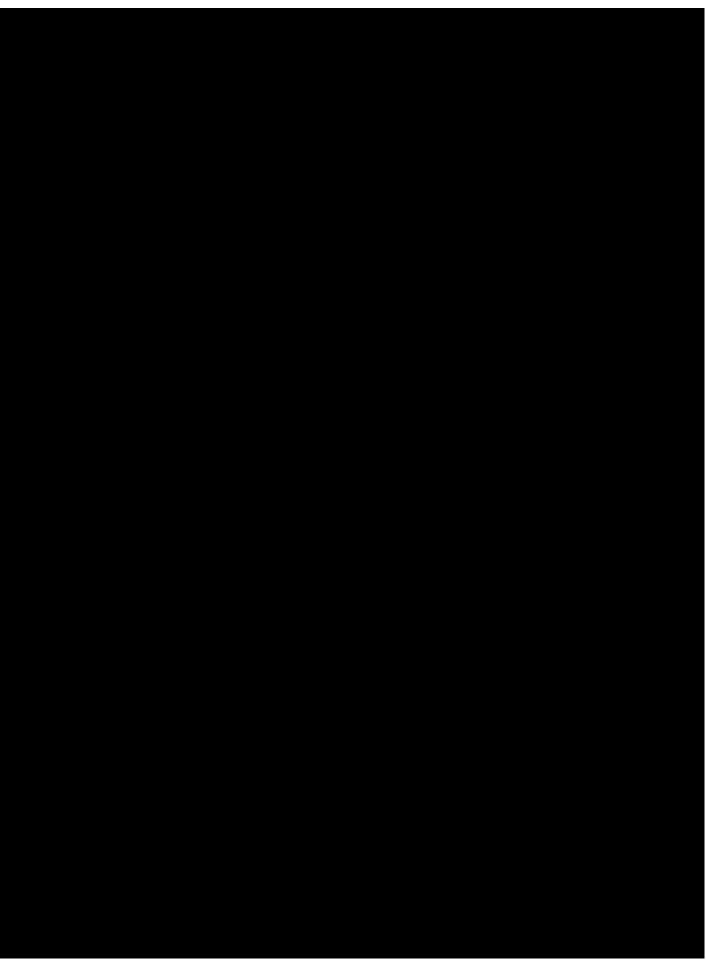


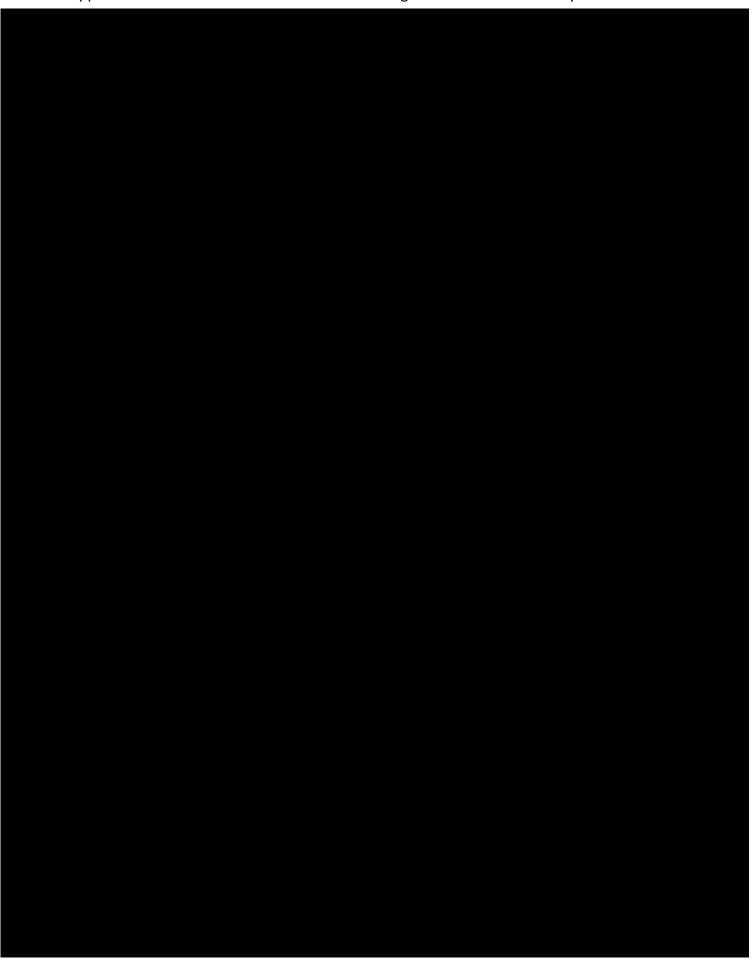


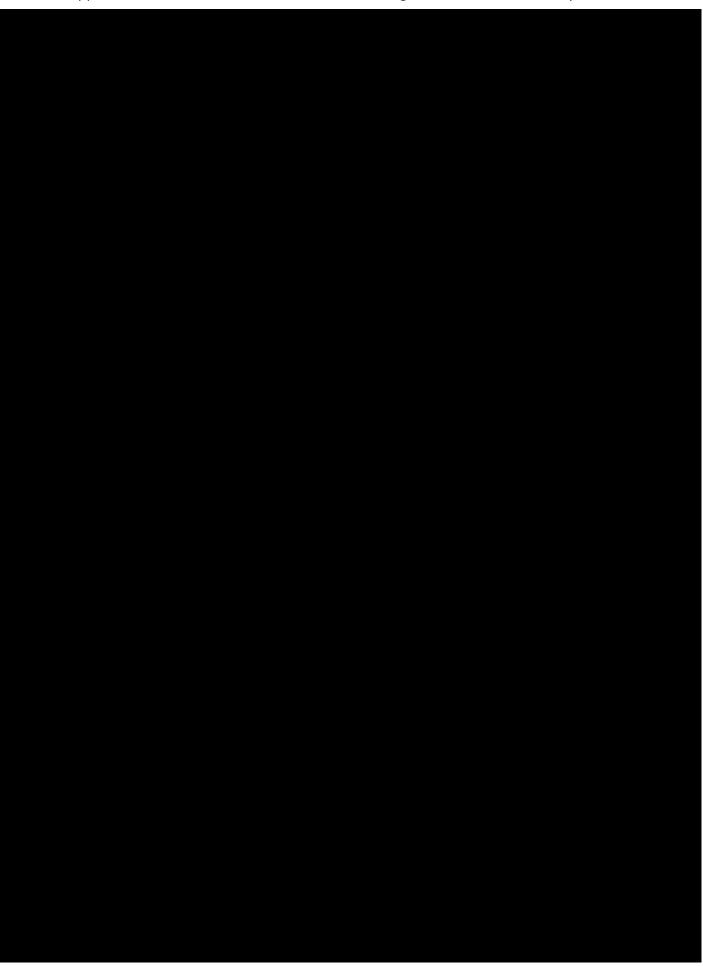


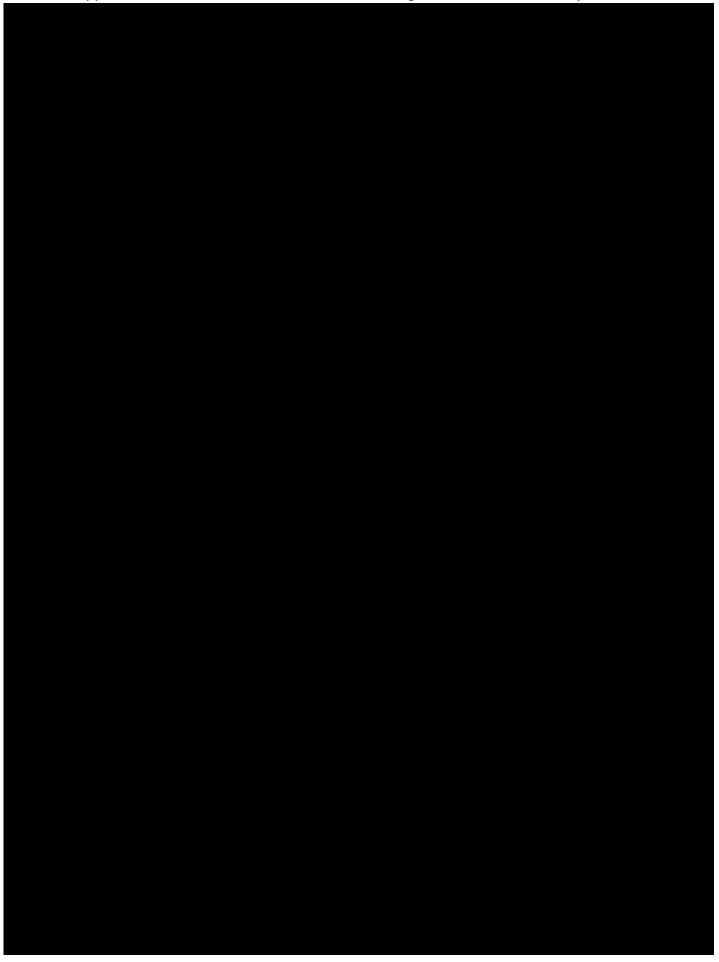


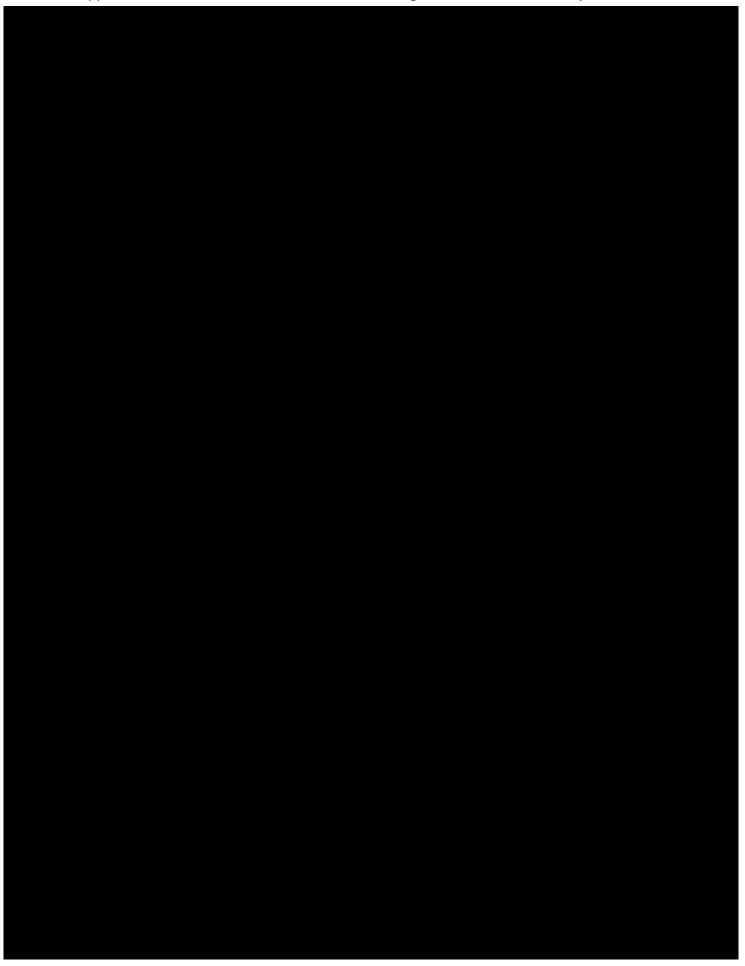


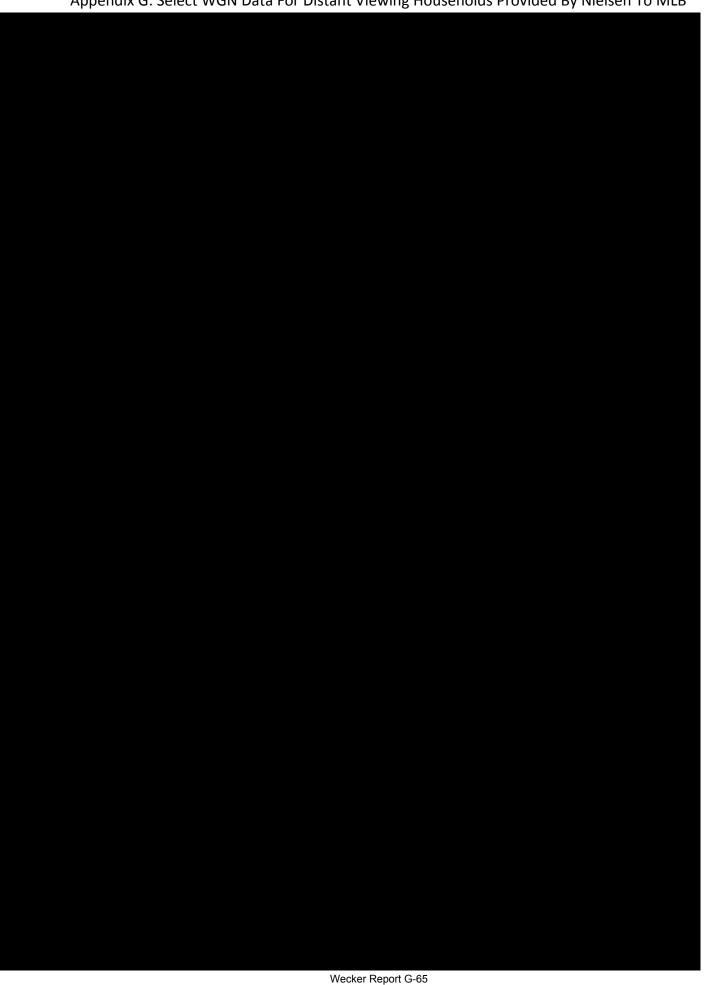


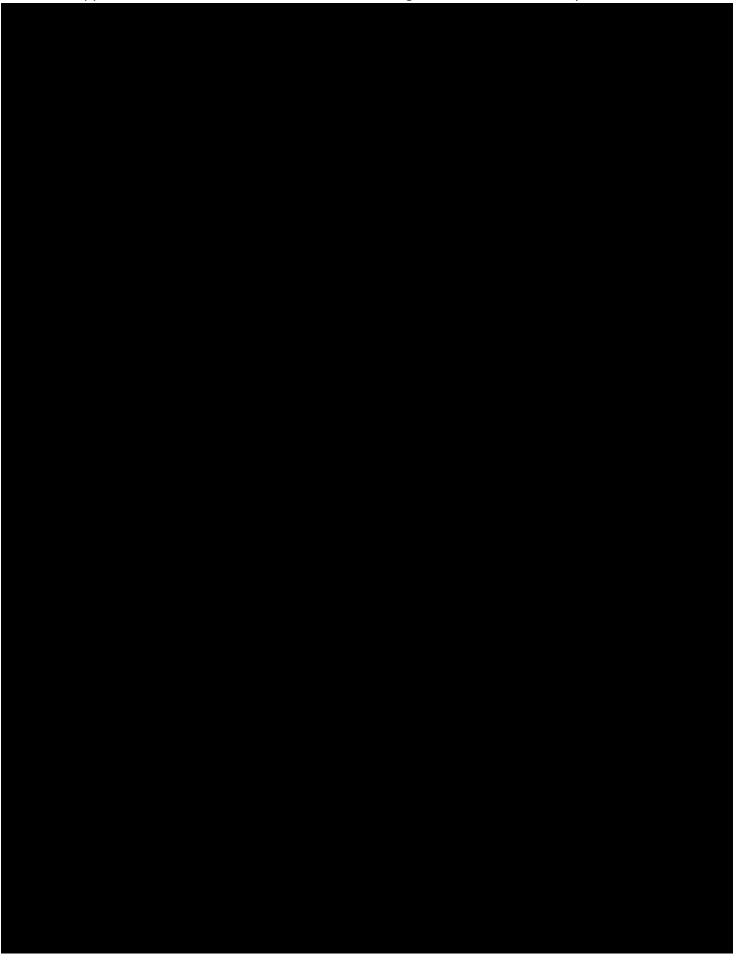


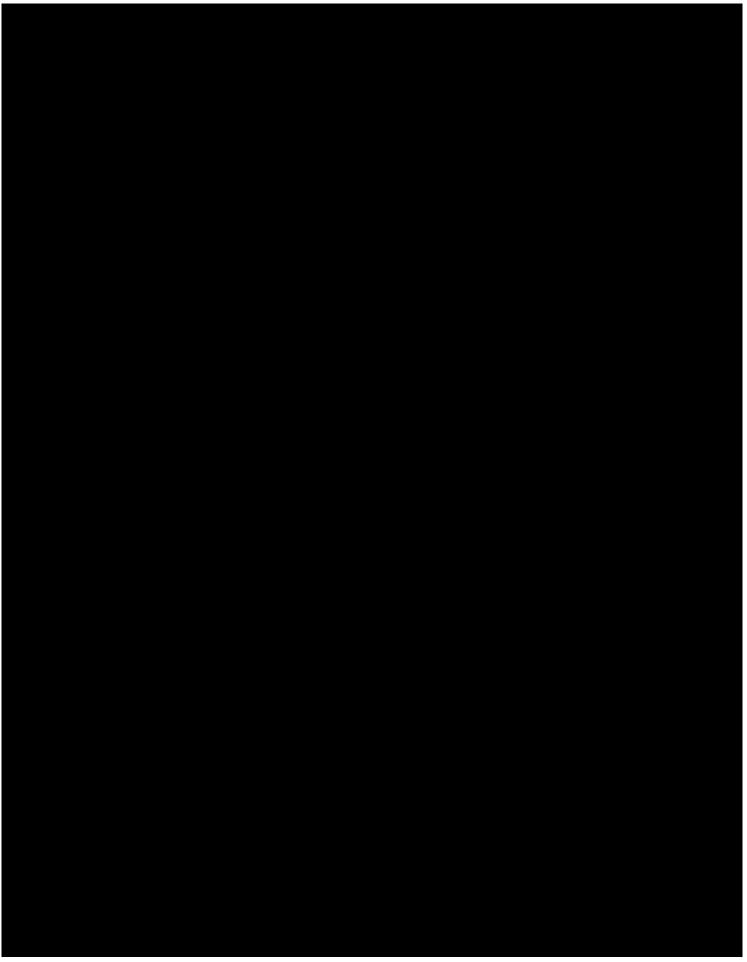


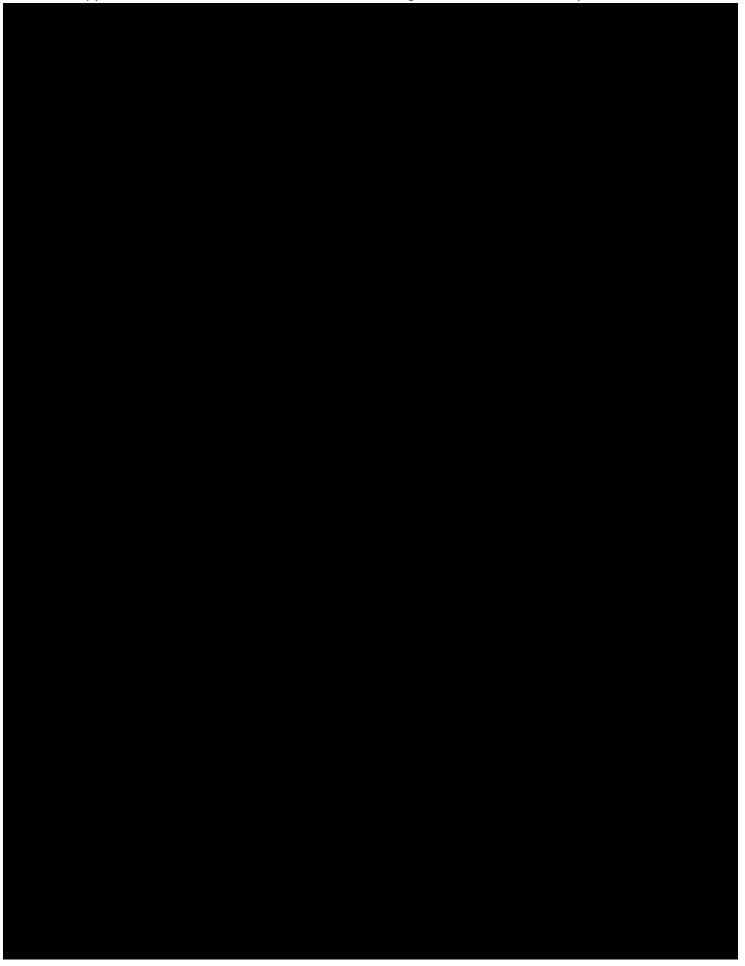


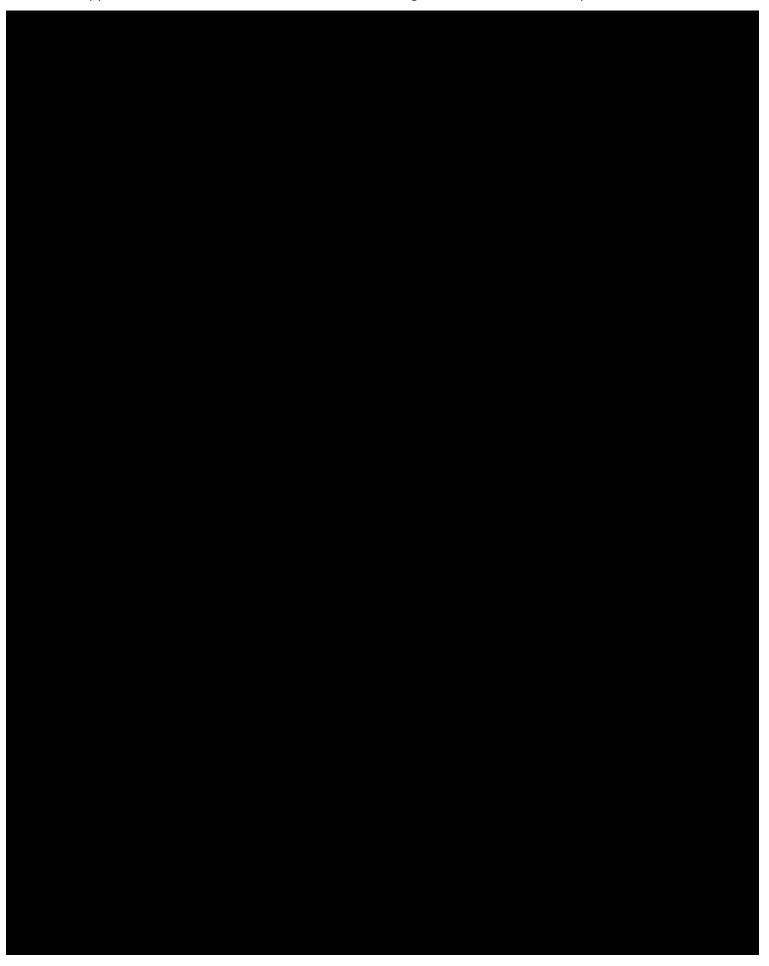




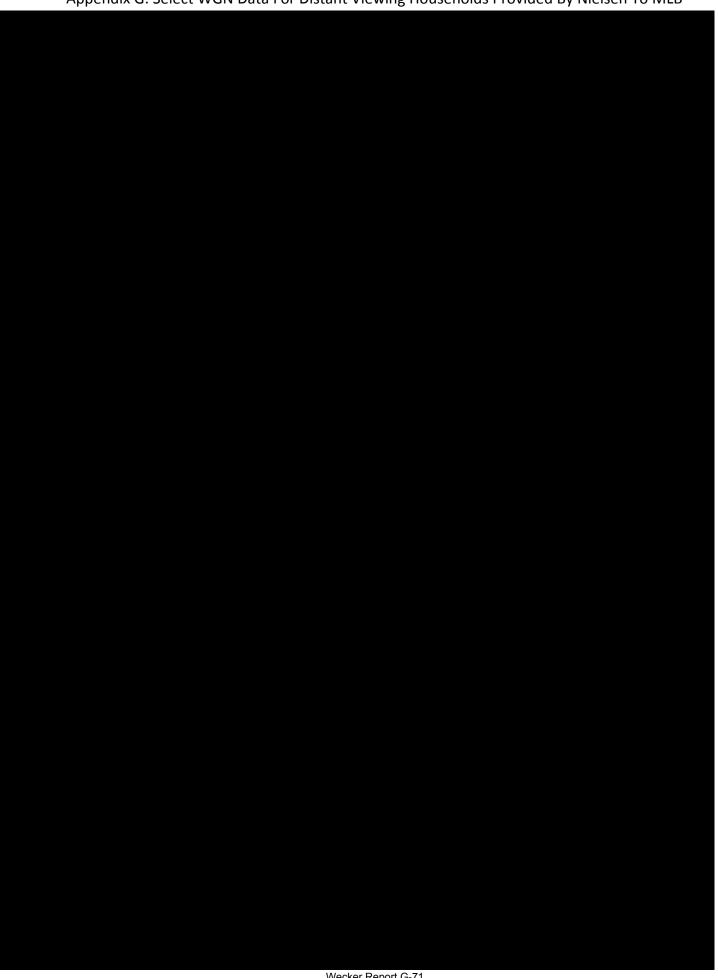




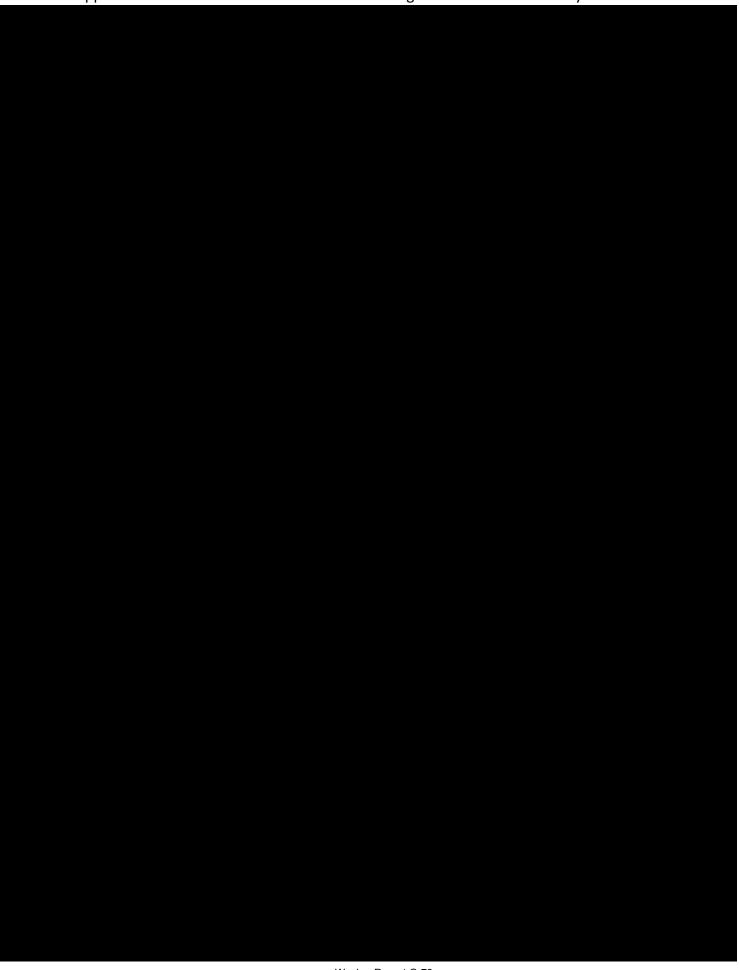


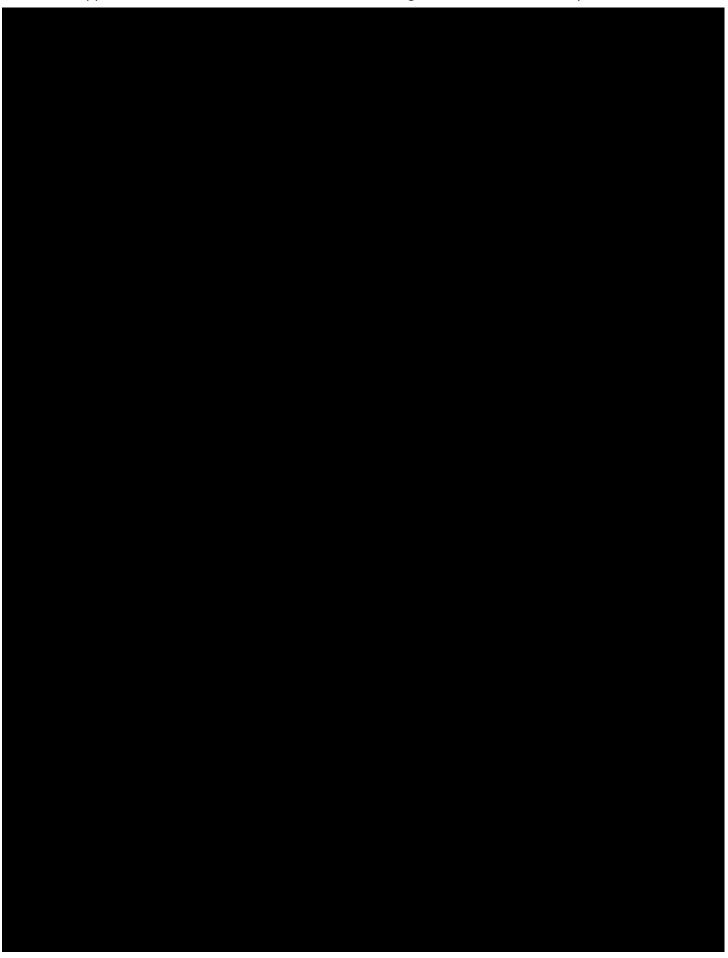


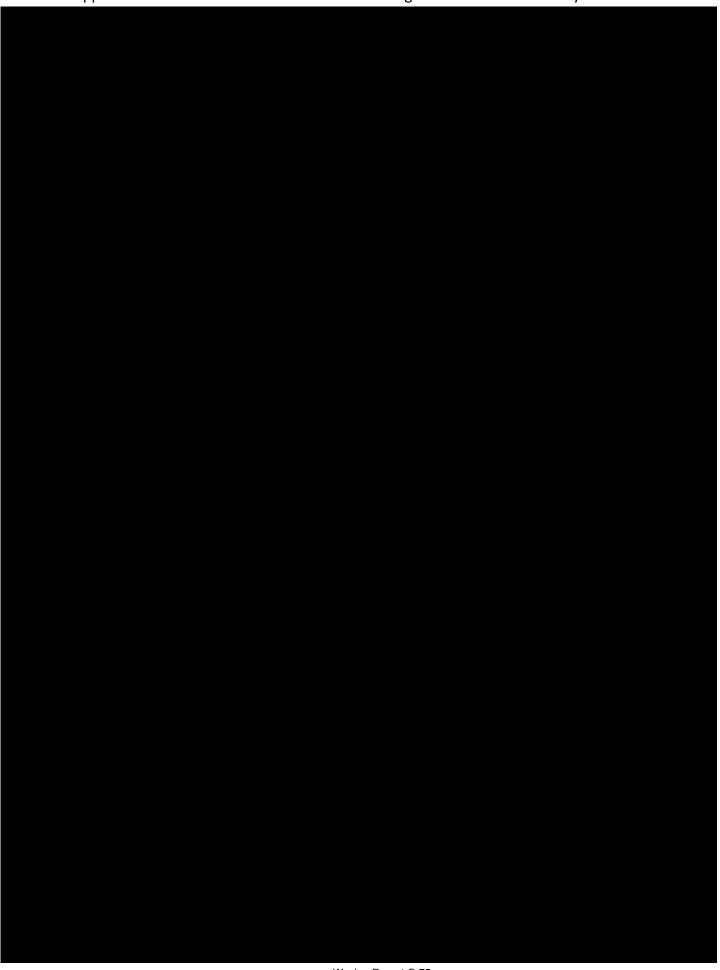


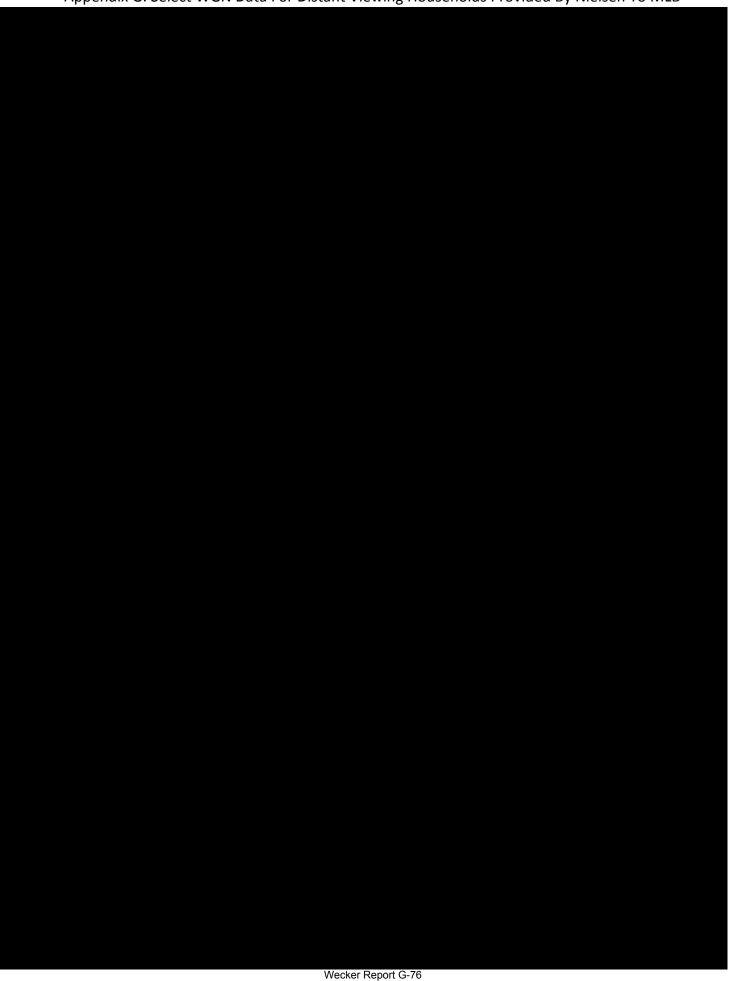


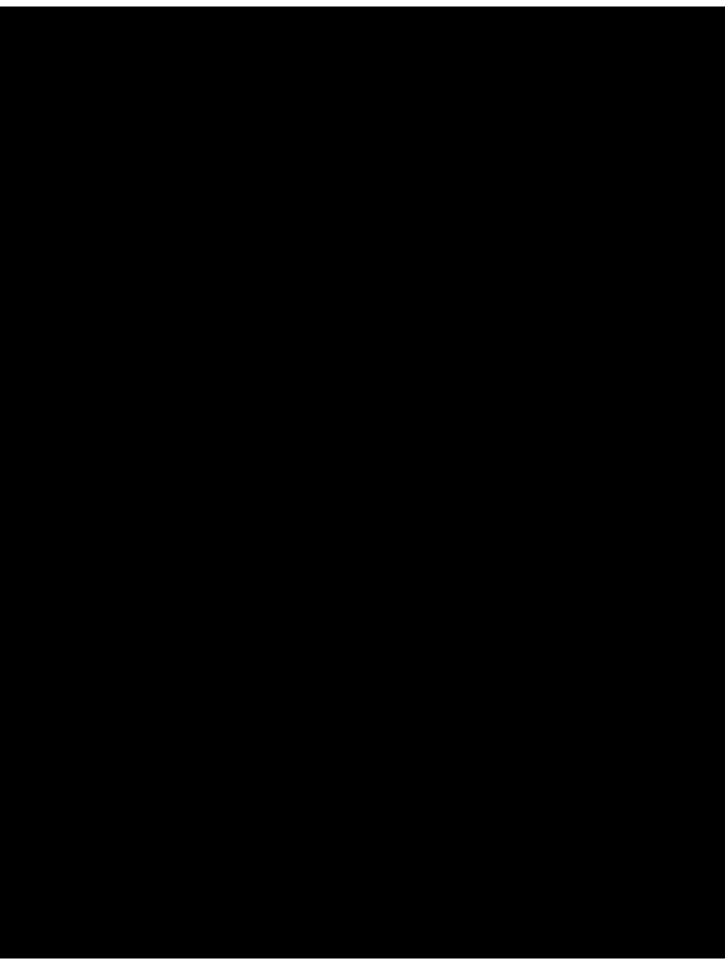


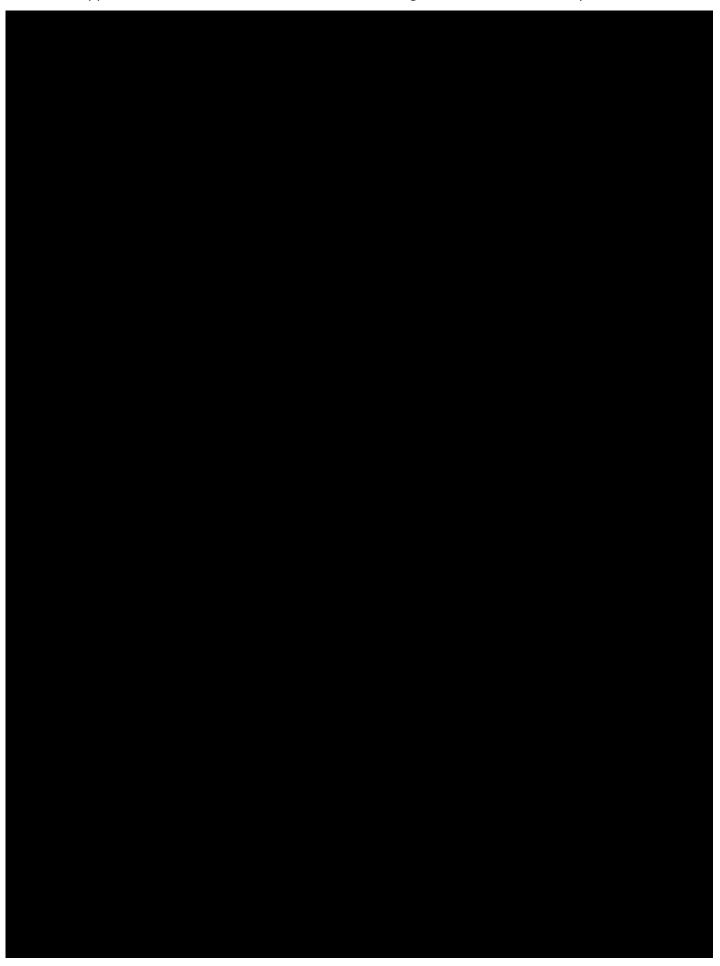


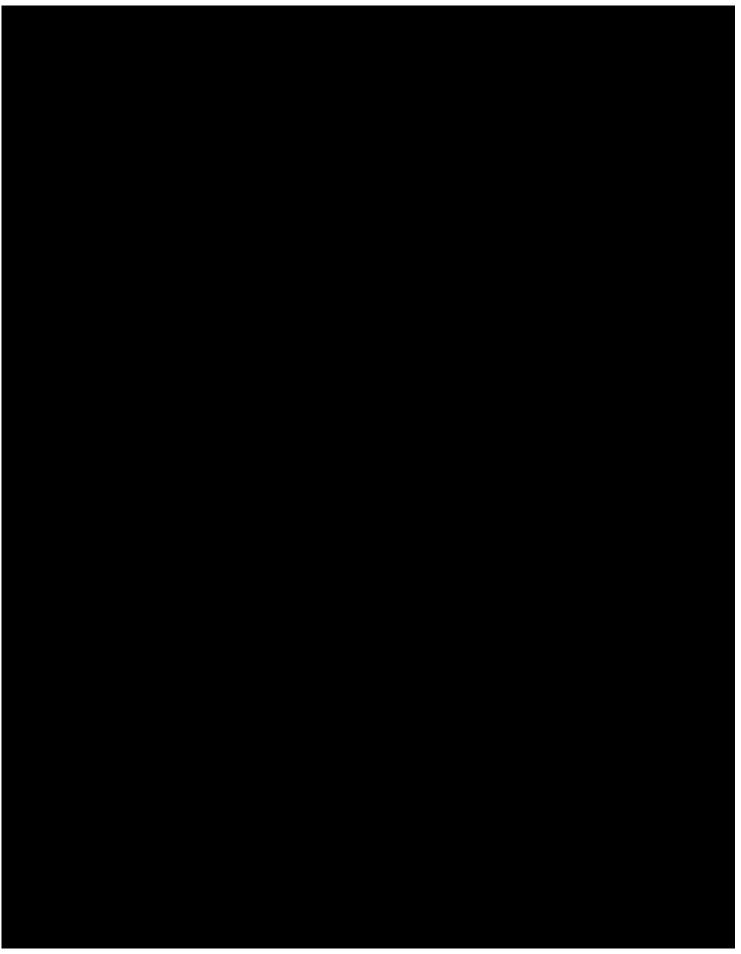


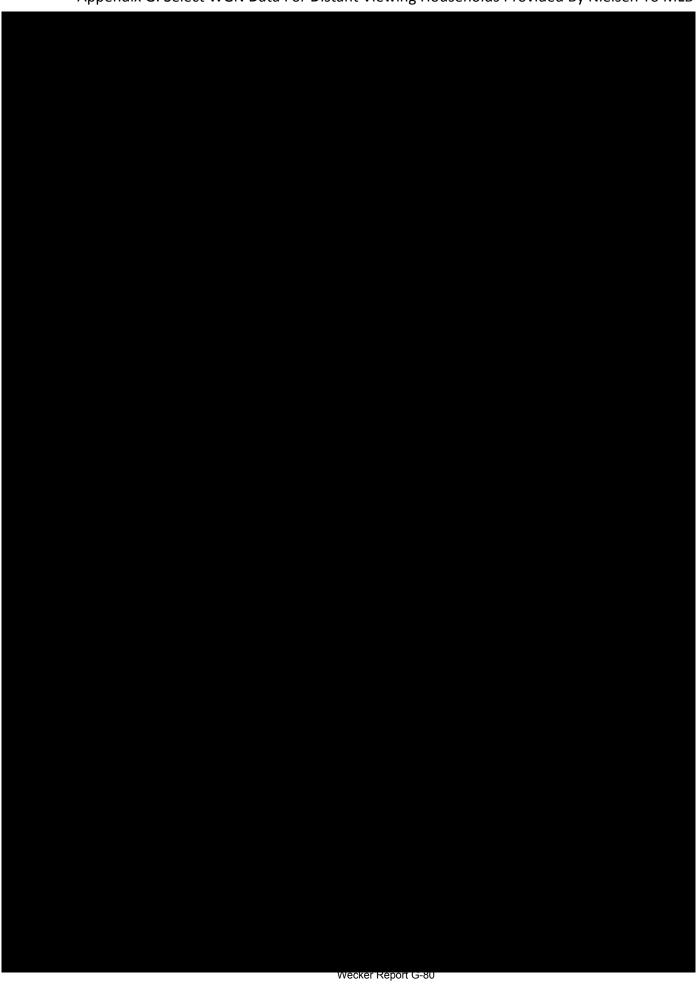


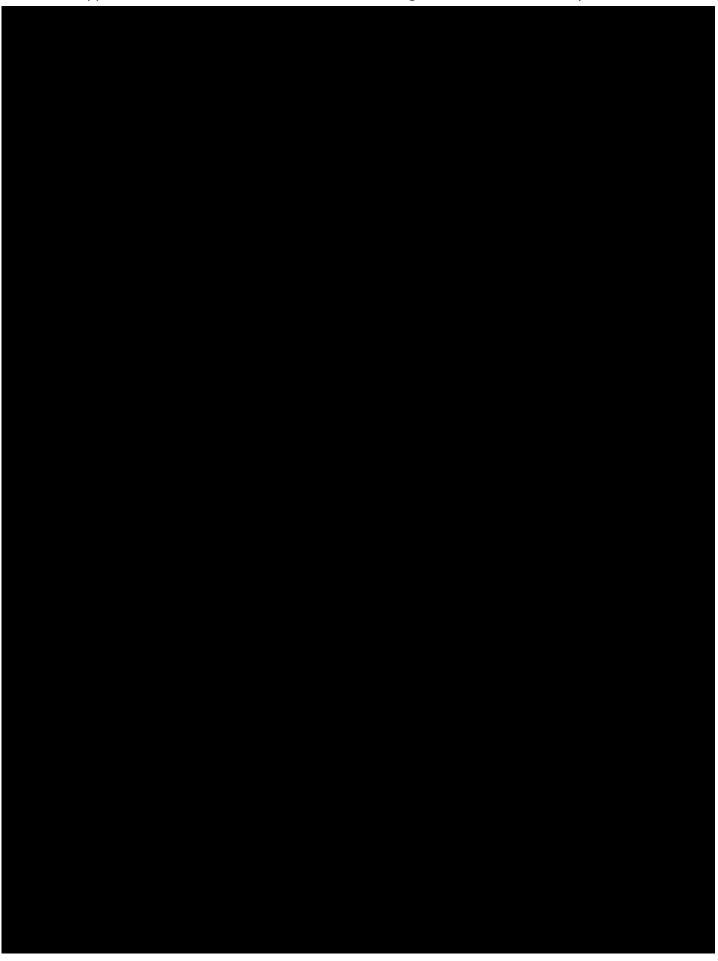


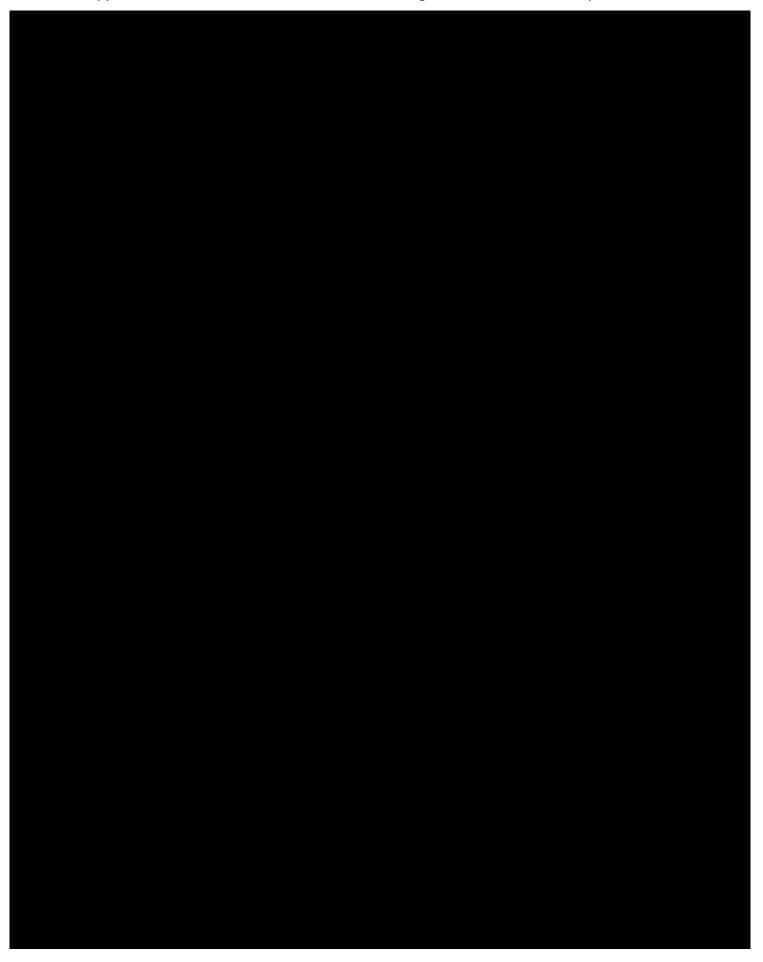


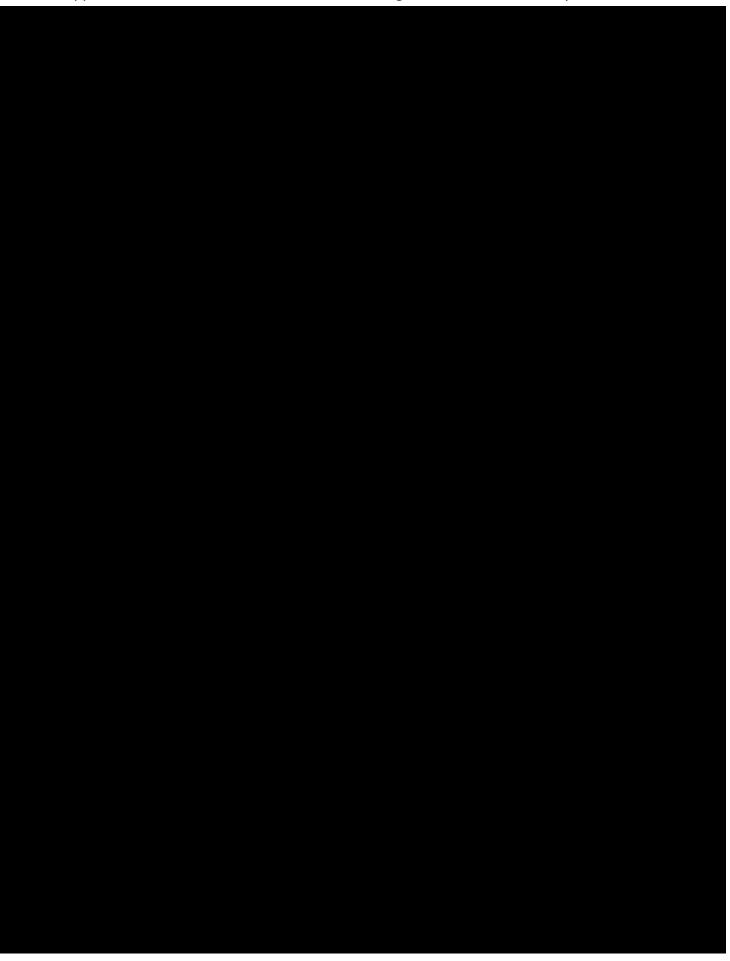


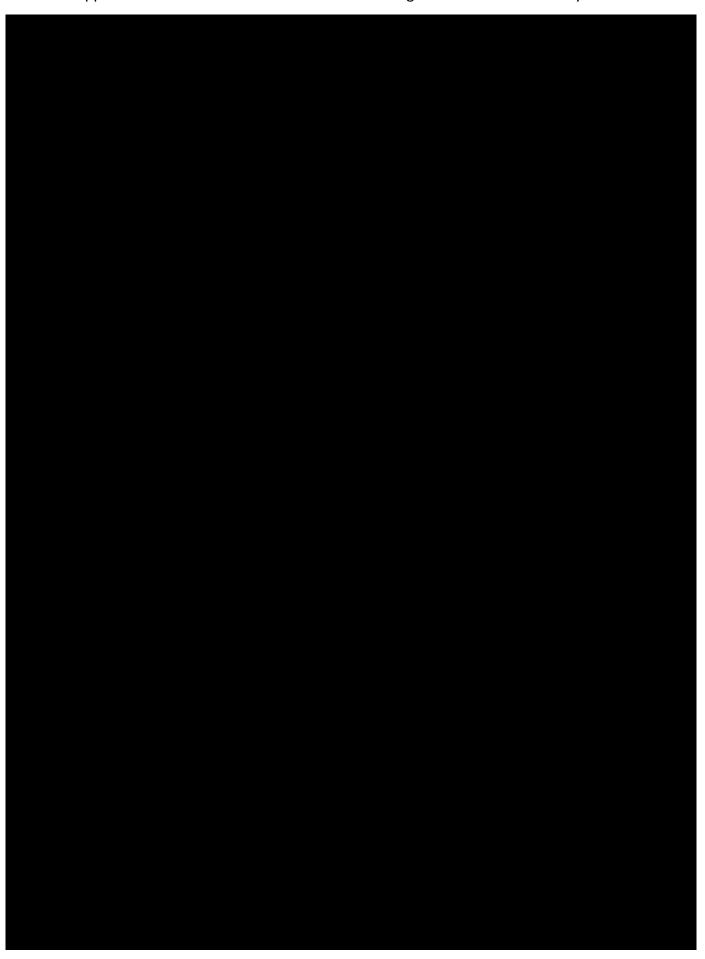


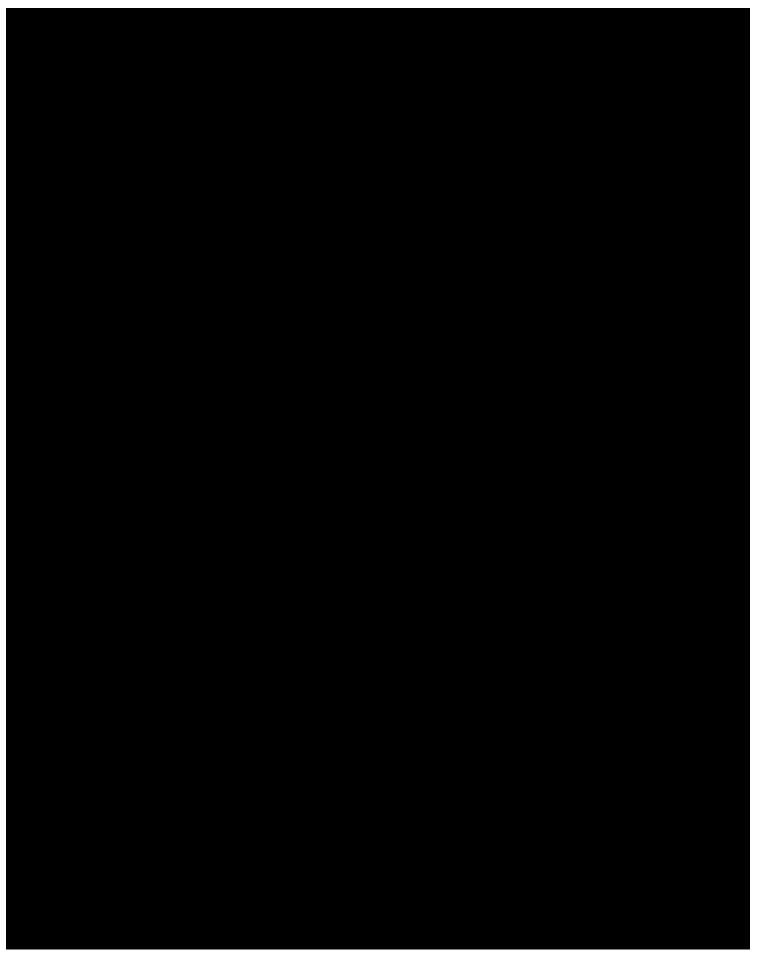


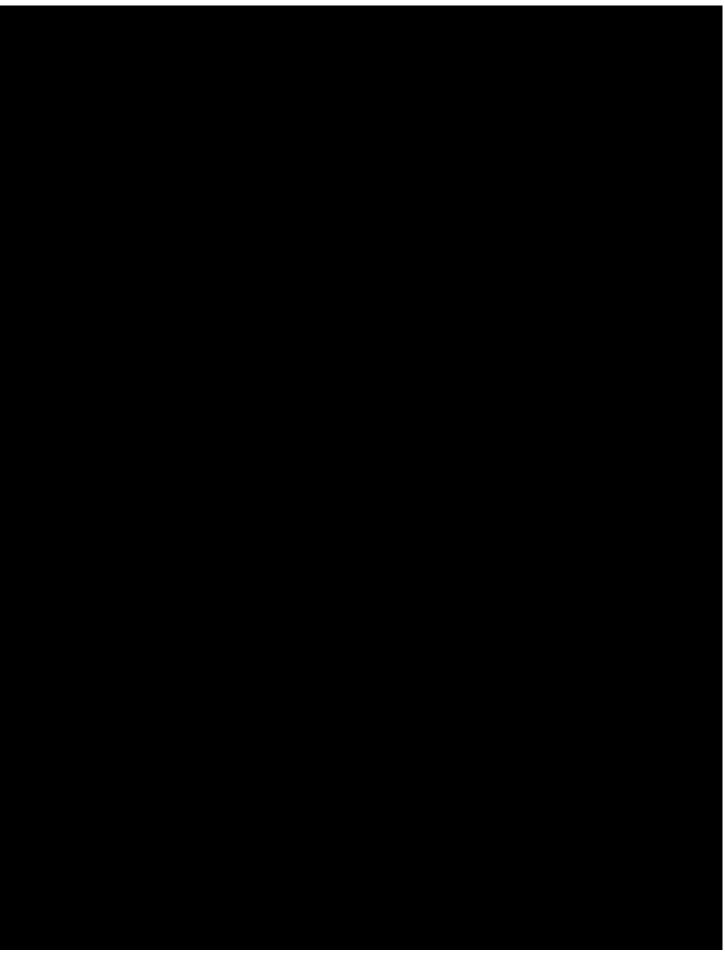


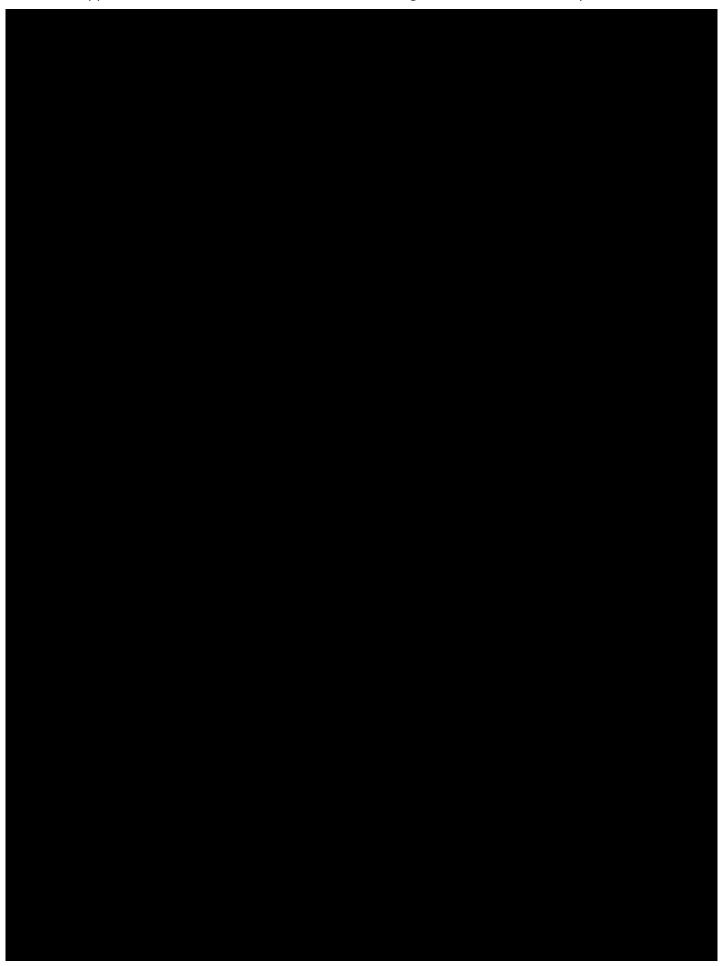


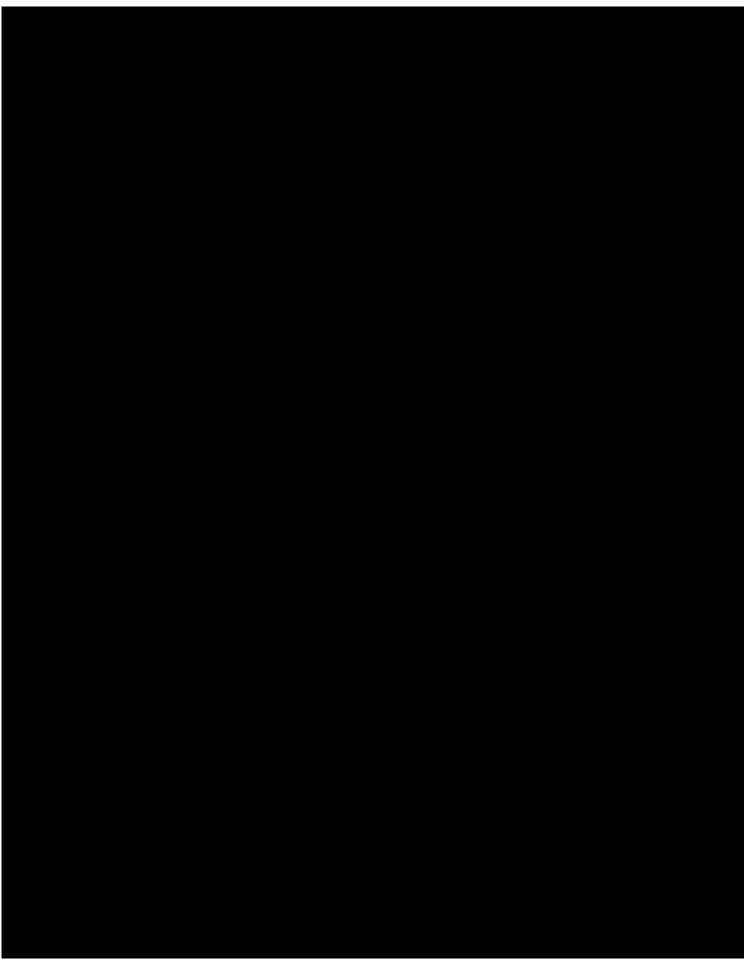




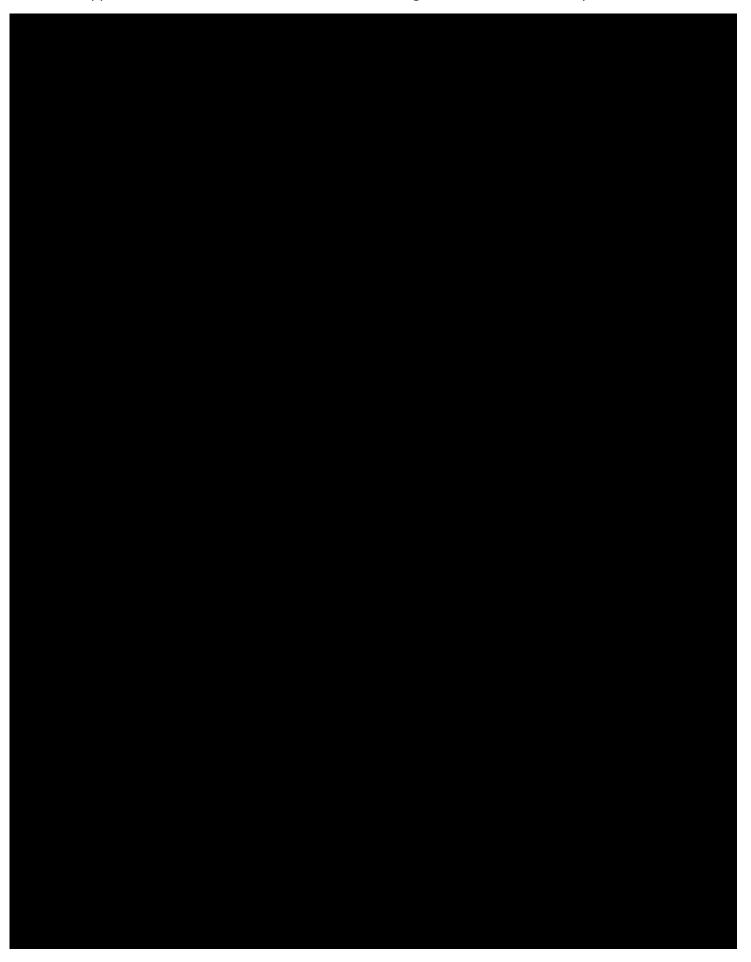




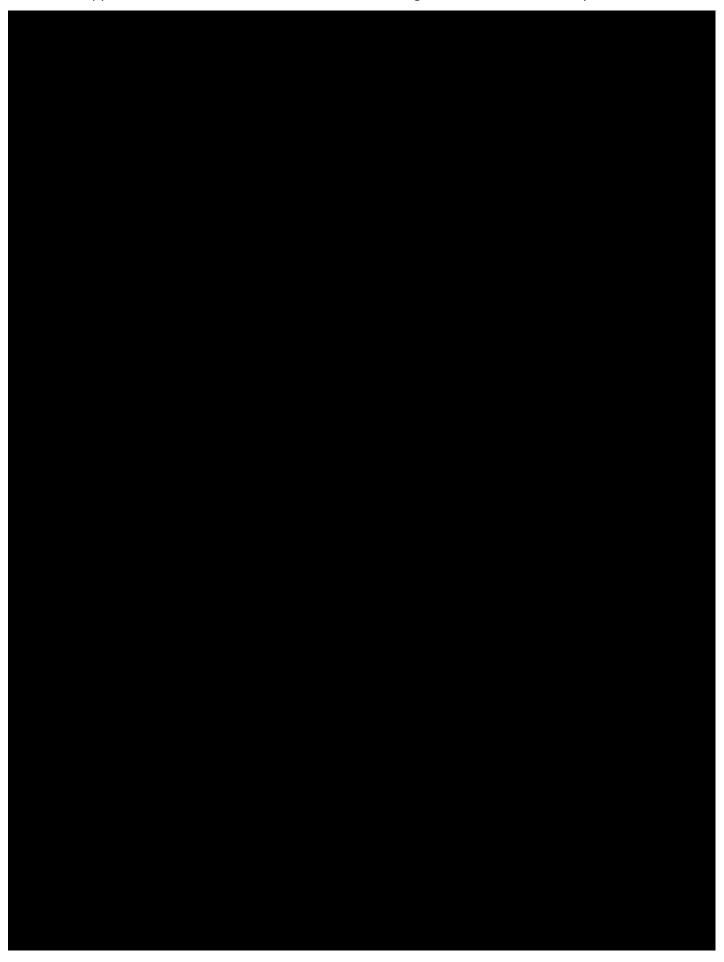


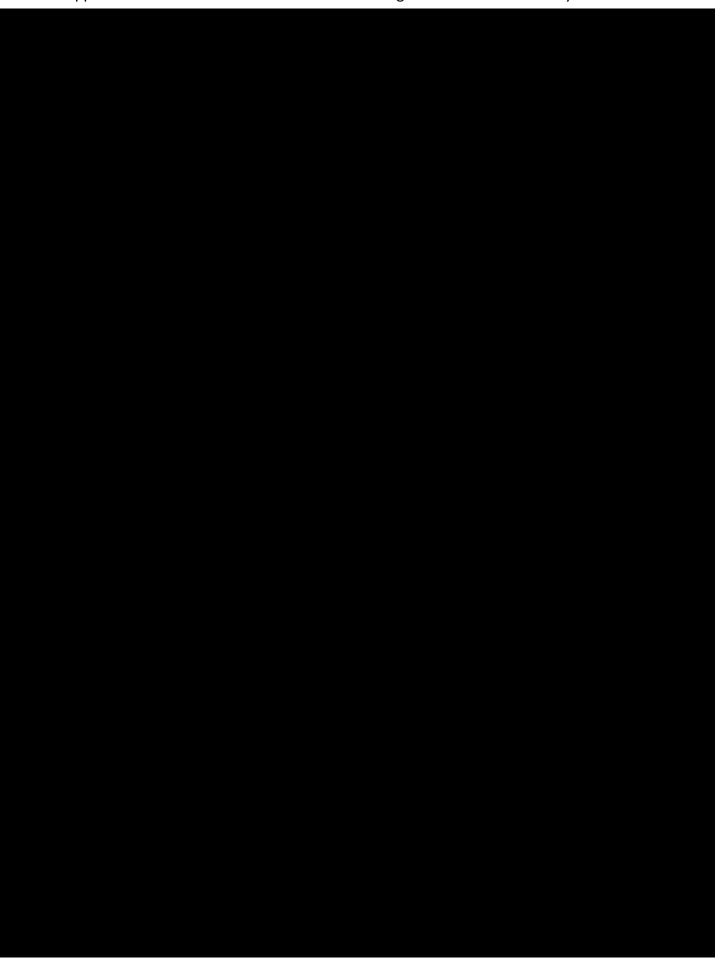


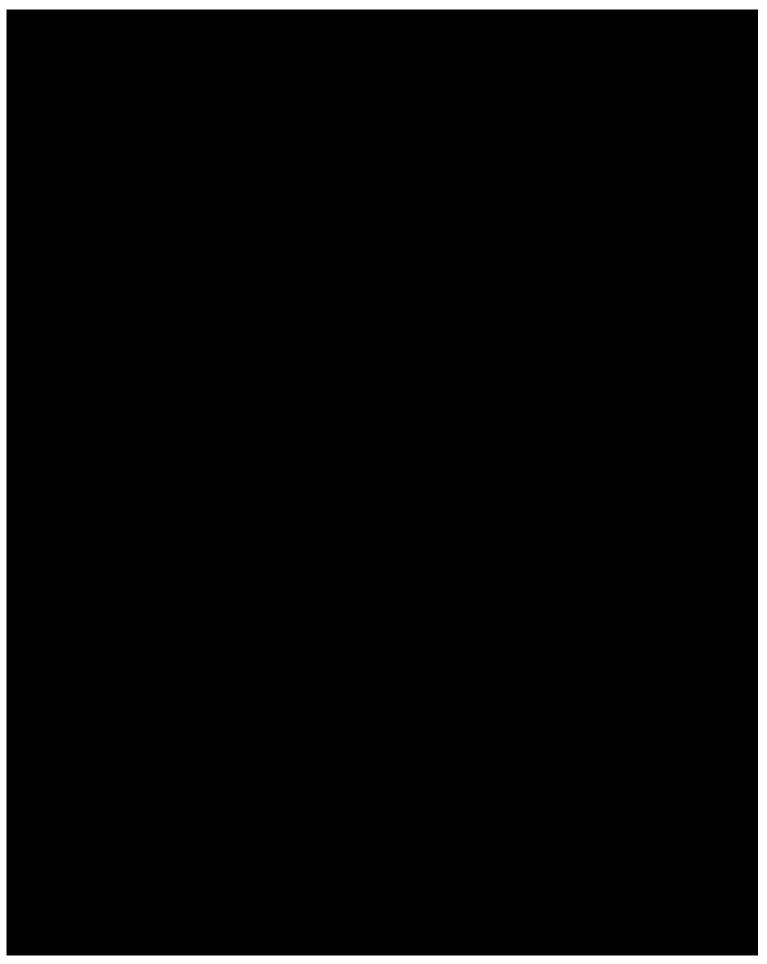
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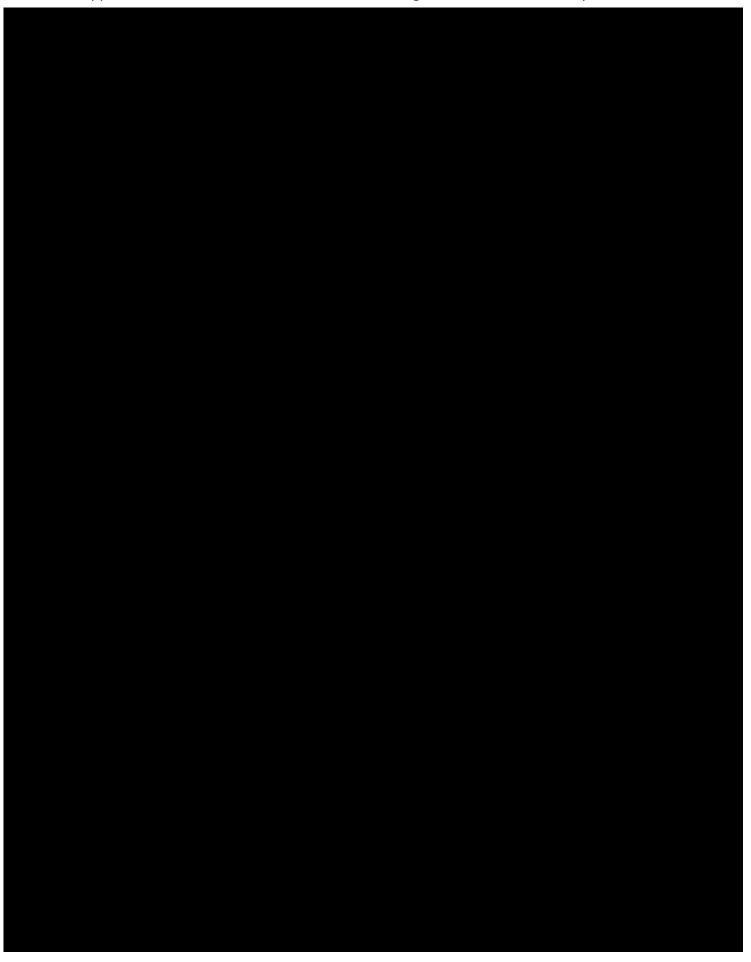


PUBLIC VERSION Appendix G: Select WGN Data For Distant Viewing Households Provided By Nielsen To MLB

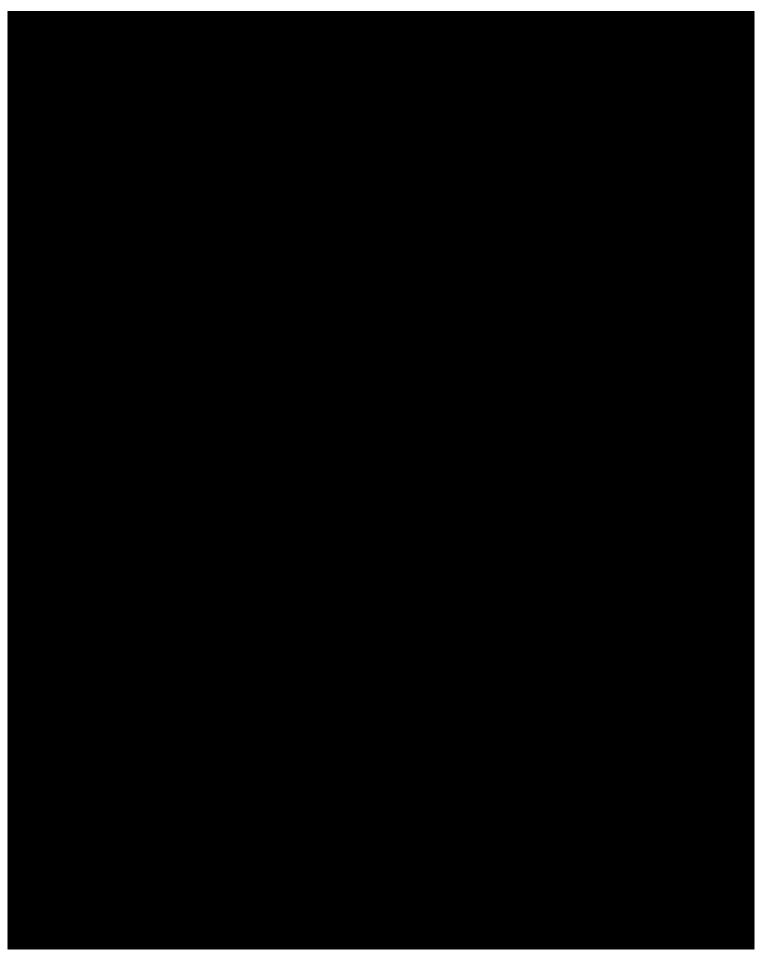


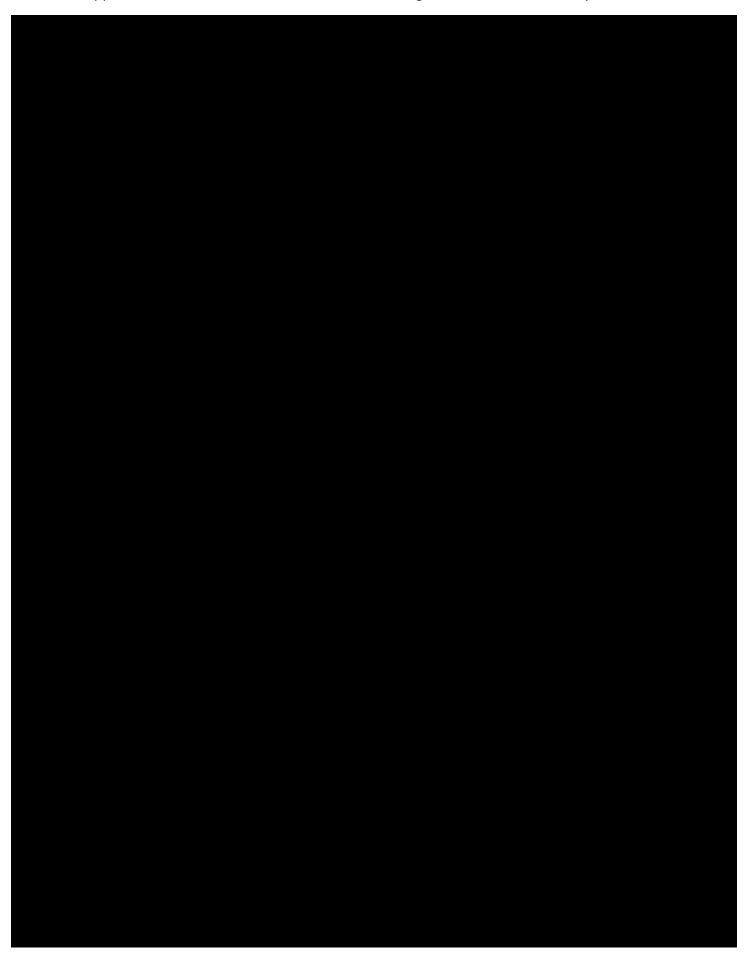


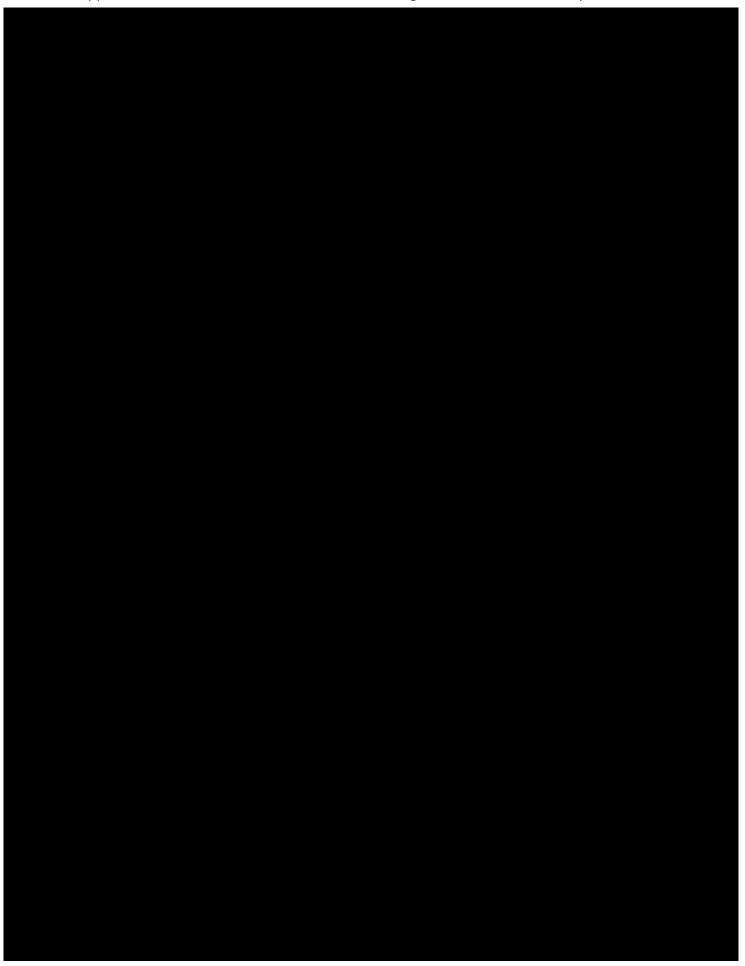




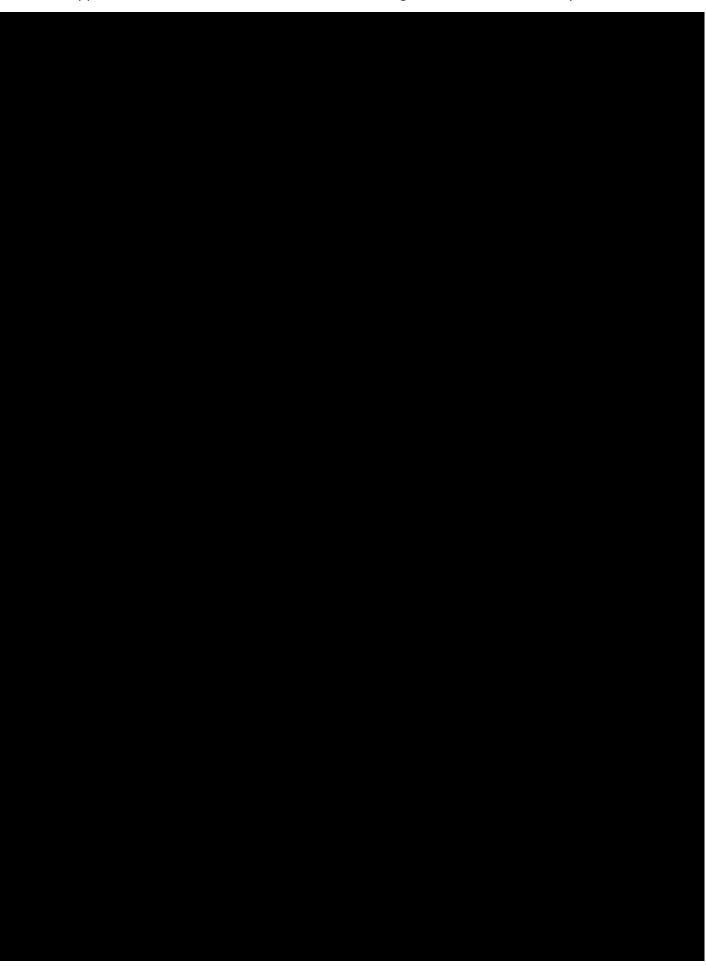
${\color{blue} PUBLIC\ VERSION} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Provided\ By\ Nielsen\ Data\ Provided\ By\ Nielsen\ By\ Nielsen\ Data\ Provided\ By\ Nielsen\ By\ Ni$

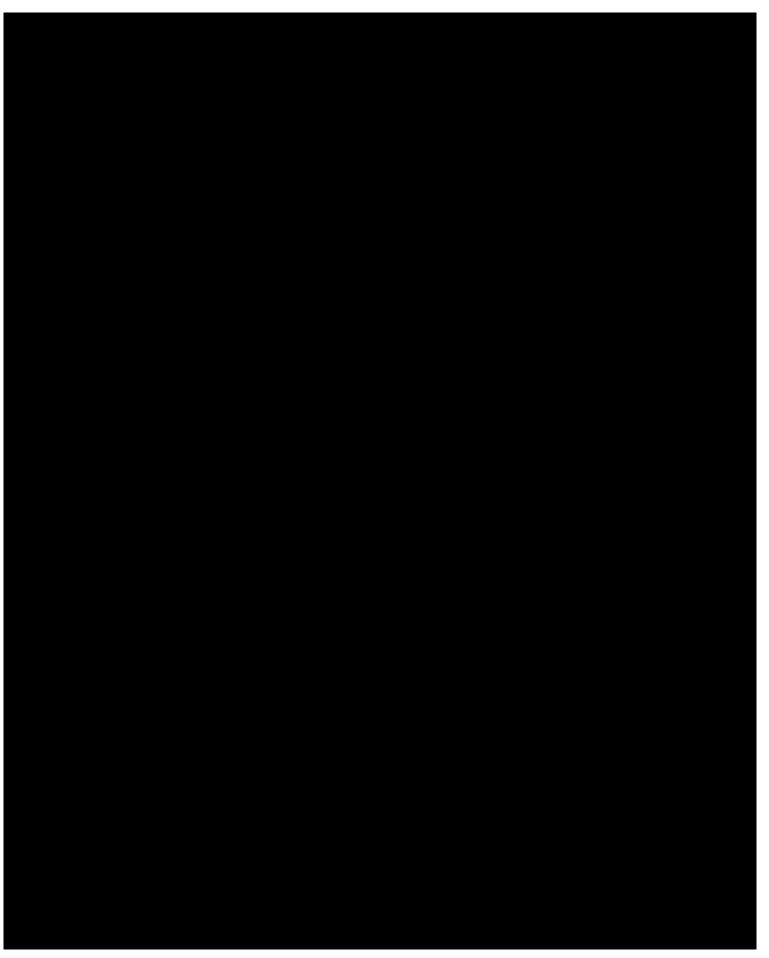


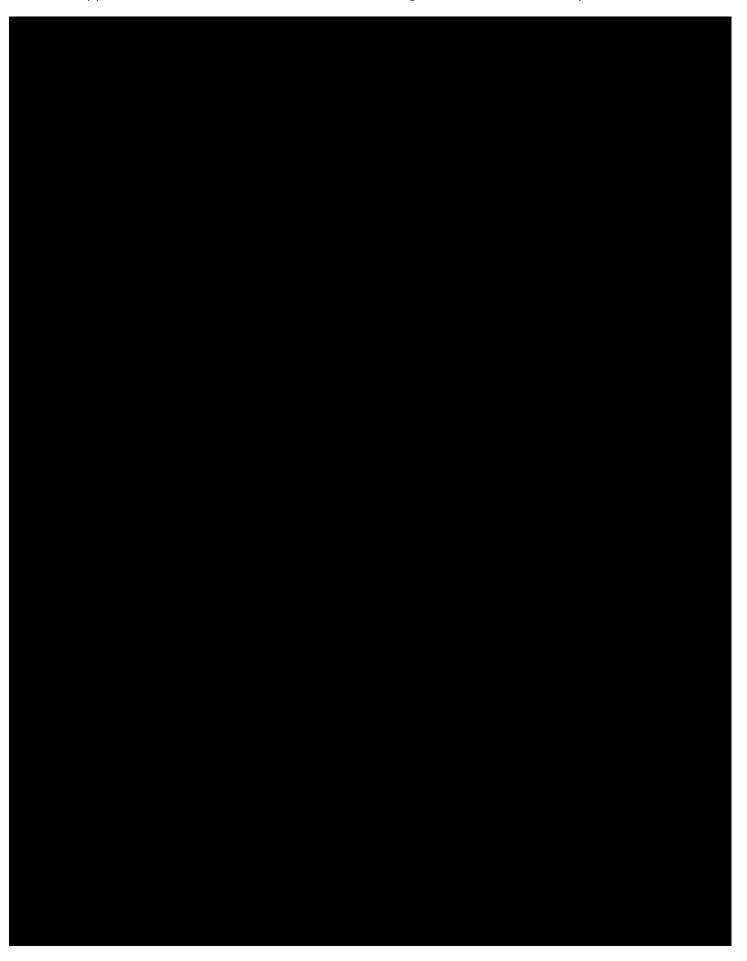


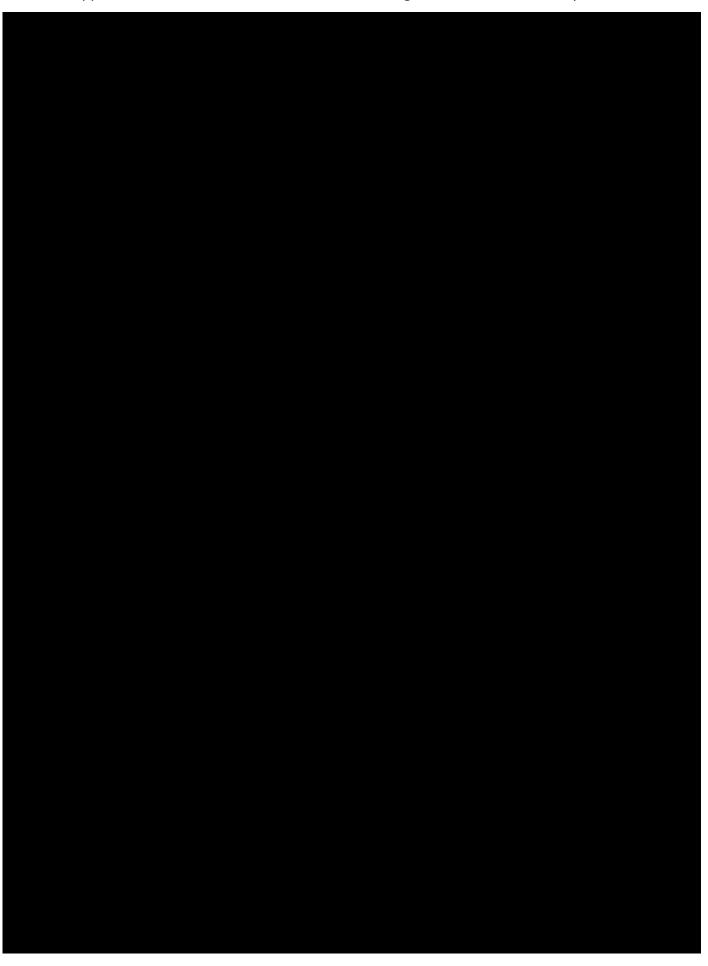


PUBLIC VERSION Appendix G: Select WGN Data For Distant Viewing Households Provided By Nielsen To MLB











${\color{blue} PUBLIC\ VERSION} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Viewing\ Households\ Provided\ By\ Nielsen\ To\ MLB} \\ {\color{blue} Appendix\ G:\ Select\ WGN\ Data\ For\ Distant\ Provided\ By\ Nielsen\ Data\ Provided\ By\ Nielsen\ By\ Nielsen\ Data\ Provided\ By\ Nielsen\ By\ Ni$



PUBLIC VERSION

Appendix H: Gray Table 2 Gray Predictions vs Gray Data

		Total Viewing		Percent of Viewing			
		Gray Table 2 Totals of Distant Viewing from Gray Regression Predictions		Distant Viewing According to Lindstrom Data	Gray Table 2 Shares of Distant Viewing from Gray Regression Predictions		Distant Viewing According to Lindstrom Data
Category	year	All Sample Stations (Same as Table 2)	Only Sample Stations with Lindstrom data	(Only Sample Stations with Lindstrom data)	All Sample Stations (Same as Table 2)	Only Sample Stations with Lindstrom data	(Only Sample Stations with Lindstrom data)
can	2010	22,577	9,162	13,610	1.96%	0.94%	1.85%
com	2010	181,958	154,681	200,288	15.83%	15.92%	27.16%
dev	2010	13,598	10,381	1,806	1.18%	1.07%	0.25%
ps	2010	585,521	467,672	288,844	50.94%	48.14%	39.18%
public	2010	321,335	308,085	222,151	27.96%	31.71%	30.13%
sports	2010	24,466	21,441	10,607	2.13%	2.21%	1.44%
•		1,149,455	971,422	737,307	100%	100%	100%
can	2011	39,472	9,637	11,560	3.93%	1.14%	2.01%
com	2011	121,186	98,428	79,286	12.06%	11.68%	13.81%
dev	2011	24,497	19,214	2,542	2.44%	2.28%	0.44%
ps	2011	501,580	417,924	242,735	49.92%	49.60%	42.28%
public	2011	292,267	276,981	220,239	29.09%	32.87%	38.37%
sports	2011	25,803	20,411	17,697	2.57%	2.42%	3.08%
		1,004,804	842,594	574,059	100%	100%	100%
	2012	27.007	40.000	40.504	2.500/	4.500/	4.550/
	2012	37,007	13,289	10,634	3.58%	1.52%	1.66%
	2012	159,938	107,645	127,226	15.48%	12.33%	19.87%
	2012	11,032	10,940	1,088	1.07%	1.25%	0.17%
•	2012	373,313	329,210	176,854	36.14%	37.71%	27.62%
•	2012	430,093	391,148	309,541	41.64%	44.80%	48.33%
sports	2012	21,596	20,856	15,077	2.09%	2.39%	2.35%
		1,032,980	873,088	640,419	100%	100%	100%
can	2013	38,340	11,014	10,611	5.16%	1.83%	1.88%
	2013	78,754	63,413	82,545	10.61%	10.54%	14.59%
	2013	8,160	6,595	4,565	1.10%	1.10%	0.81%
	2013	334,733	263,661	266,799	45.09%	43.81%	47.15%
public		247,143	223,391	181,818	33.29%	37.12%	32.13%
sports		35,303	33,718	19,528	4.76%	5.60%	3.45%
300113	2013	742,435	601,792	565,866	100%	100%	100%
		7 12,100	001,101				
can	all	137,396	43,101	46,416	3.5%	1.3%	1.8%
com	all	541,836	424,168	489,345	13.8%	12.9%	19.4%
dev	all	57,286	47,130	10,002	1.5%	1.4%	0.4%
ps	all	1,795,148	1,478,467	975,231	45.7%	45.0%	38.7%
public	all	1,290,838	1,199,604	933,749	32.8%	36.5%	37.1%
sports	all	107,169	96,425	62,909	2.7%	2.9%	2.5%
-		3,929,673	3,288,895	2,517,651	100%	100%	100%

ROGER WERNER
PRESIDENT & CEO

Testimony of Roger L. Werner, Jr.
President and Chief Executive Officer
Prime Sports Ventures, Inc.

Qualifications

I am President and Chief Executive Officer of Prime Sports Ventures, Inc., which with TCI (the nation's largest cable MSO), and Group W/Westinghouse Broadcasting Co. owns five regional sports networks and Prime Network, a national sports service. Prime Network provides professional, collegiate and amateur sports programming to many regional sports networks (such as Home Team Sports, Prime Ticket and Madison Square Garden Network), which collectively serve more than 22 million cable subscribers throughout the United States.

Before joining Prime Sports Ventures in September of 1990, I was President, Chief Executive Officer and a member of the Board of Directors of ESPN, Inc. a 24-hour sports programming channel delivered via satellite to cable operators and other non-broadcast distribution systems. ESPN now reaches in excess of 56 million cable subscribers, more than any other cable network. My involvement with ESPN began in 1980, when I was a consultant with McKinsey and Company working on the development of ESPN's original business plan. During the years 1981 through 1988, I held various positions with ESPN, including Executive Vice President and Chief Operating Officer. I was appointed President and CEO of ESPN in August 1988 after spending a brief period with ESPN's parent company as Executive Vice President of the ABC Television Network Group. As part of my responsibilities at Prime Sports Ventures, ESPN and ABC, I have had considerable involvement in the acquisition of various types of sports and entertainment programming for delivery to the cable industry, including Major League Baseball, NBA Basketball, NHL Hockey, college basketball and college football. I also have been directly involved in the marketing of that programming to the cable industry. I am thus knowledgeable about the value that cable operators, advertisers and cable networks place on different types of programming. I have made numerous business-related decisions with significant economic consequences based upon that knowledge.

While at Prime Sports and ESPN, I have had a substantial amount of contact with cable operators. I was elected to serve on the Board of Governors of the National Academy of Cable Programming effective January 1988. In May 1989, I was elected to serve on the National Cable Television Association Board of Directors. In 1987, I was presented the Cable Advertising Bureau President's Award for Outstanding Service to the Cable Industry.

Purpose of Testimony

I understand that the purpose of this proceeding is to divide the 1989 cable television compulsory licensing royalties among the copyright owners of programming carried on superstations and other distant signals. I have been advised that, in past proceedings, the Tribunal used "viewing" data as the principal basis for determining the relative values of this programming, and thus the amounts to be allocated each of the copyright owner groups. It has been explained to me that, for purposes of these proceedings, "viewing " refers to 1) the average number of cable households that watch a distant signal program during a quarter hour multiplied by 2) the total number of quarter hours that program was broadcast.

I have been asked by the Joint Sports Claimants (Major League Baseball, the NBA, the NHL and NCAA) to present my opinion concerning the relationship between "viewing" and the value that the cable industry attaches to programming.

Program "Viewing" vs. Program Value

I will consider the issue first from the standpoint of a cable network, such as ESPN which seeks to maximize the total revenues it generates from cable system subscriber fees and advertising ESPN's revenues are nearly equally split between revenues. subscription fees and advertising sales. Because audience-related data are important to advertisers such data also are important to ESPN in determining the value of particular programming. However, the amounts that ESPN pays for its programming are not reflected in "viewing" data. For example, based on information supplied to me by the Office of the Commissioner of Baseball, I understand that Baseball's telecasts on ESPN represented a less than a 15 percent share of the total "viewing" generated by ESPN programming in 1990. The payments made by ESPN for those telecasts (rights fees plus production costs) amount to more than 30 percent of ESPN's total 1990 program budget (i.e., the expense incurred by ESPN for the telecast of all its 1990 programming).

The reason "viewing" does not equate with value is that "viewing" considers only size of audience and number of hours broadcast. Thus, it fails to account for several factors that determine the value of a program to ESPN, its advertisers and, most importantly, its cable system carriers such as: 1. audience demographics (age, sex, income) and their impact on a cable operator's local ad-sales effort; 2. The importance of uniqueness or exclusivity to a program's perceived value (live sports events, films off-network TVfeature or shows, simultaneously available on competing networks, on video cassettes or in theaters); 3. The blue-chip brand image's of established sports which help promote cable generally, and help attract new subscribers to the medium.

In my opinion, "viewing" is even less useful in measuring the value to cable operators of programming on superstations and other distant signals. Cable operators do not sell advertising time on distant signals and thus they have little concern sout the size of the audience generated by distant signal programming nationally or locally. Their sole concern is with attracting and retaining paying subscribers. Programs that generate large "viewing" numbers are not necessarily the same ones that attract and retain subscription purchase decision makers.

For example, in 1989 USA Network (which consisted primarily of movies and syndicated programs) delivered audiences that, on average, were some 20 to 25 percent larger than those delivered by ESPN (7 A.M. to 1 A. M.). Nevertheless, according to a 1989 survey of cable operators conducted by Myers Marketing & Research, the cable industry ranked ESPN as the most important basic cable network in terms of its ability to attract and to retain subscribers. Furthermore, cable operators paid almost twice as much to carry ESPN as they paid to carry USA Network. ESPN charged cable systems a carriage fee of some 32 cents per subscriber per month in 1989. (The ESPN fee was up from only 4 cents in 1979.) USA Network's fee, on the other hand, was 18 cents per subscriber per month. Although ESPN has the highest affiliate fee of any basic cable network, more cable systems (with more subscribers) are affiliated with ESPN than with any other basic cable network.

ESPN's significant growth and acceptance by the cable industry during the 1980's mirrors the growth in popularity of the major televised sports in that period -- a fact which is also reflected in the escalation of sports rights fees (witness, for example the \$400 million deal between Baseball as ESPN concluded in 1989). In summary, sports programming is generally most important to those persons who are principally responsible for deciding whether to subscribe or to continue subscribing to cable. The intensity and economic importance of this loyalty is not apparent in "viewing" numbers which are primarily a function of the large volume of available entertainment programming hours.

Statement of Dr. Steven S. Wildman

I am Director of the Program in Telecommunications Science, Management and Policy and am an Associate Professor in the Department of Communication Studies at Northwestern University. I received my Masters and Doctorate in Economics from Stanford University and hold a B.A. in economics from Wabash College. Following completion of my graduate work, I was an Assistant Professor in the Department of Economics at the University of California at Los Angeles from 1979 to 1983 and served as a consultant to the Rand Corporation from 1981 to 1983. I was a Senior Economist with Economists Incorporated from 1983 to 1988, and since 1988 I have been at Northwestern University. I have continued to consult since returning to academia and since 1994 I have been a principal in the Law and Economics Consulting Group, Inc. Additional information about my professional background and qualifications is presented in my curriculum vitae, which is attached to this Statement.

I testified before the Copyright Royalty Tribunal in 1985 as part of the 1983 Cable Royalty Distribution Proceeding. In general, my research, publications, and consulting work have focused on the analysis of markets for various communication services. I have authored and coauthored numerous articles and book chapters on communication industries and I have co-authored two books dealing with

various economic and policy issues that arise in markets for video products, such as television programs and motion pictures. My most recent book is <u>Video Economics</u>, which I co-authored with Bruce M. Owen. This book provides an extensive analysis of the cable and broadcast markets for television programs.

I. CABLE OPERATORS, NOT SUBSCRIBERS, ARE THE RELEVANT ACTORS IN THE CABLE DISTANT SIGNAL MARKETPLACE.

In determining how a competitive market for cable retransmission of distant broadcast signals would work, it is important to recognize that cable systems, not viewers, would be the buyers in this market. Viewers do not make direct payments to program owners for the programs they receive by cable. Rather, cable systems purchase retransmission rights to program services, such as cable networks and distant broadcast stations, which in turn contract with program suppliers for the right to put together organized and systematic schedules of programs for viewers. Therefore, it is the demands of cable systems for programs and program services that would directly determine the earnings of copyright holders. Of course, subscriber preferences are reflected in cable systems' demands for programs supplied by program services; but subscriber demand is relevant to the determination of appropriate payments for programs on distant signals only as it is filtered through the profit-maximizing calculus of cable system operators (CSOs).

For reasons explained below in Section II, there is no reason to expect measures of viewer preferences among different types of programs to be a good proxy for cable system operators' demands for these programs. The best evidence of the prices that likely would be paid for programs on distant signals in the absence of a compulsory license is a measure of what CSOs would be willing to pay for the programs on those signals. Such willingness to pay is a reflection of the amounts CSOs expect those signals to contribute to their own net revenues.

All market transactions are based on just such subjective evaluations by marketplace actors. Therefore, even if CSOs are, by some external measure, mistaken to some degree in their assessments of subscriber demand, their experience-based evaluations will still determine how much they are willing to pay for programs. Furthermore, these experience-based evaluations often reflect factors that, due to common measurement and data problems, cannot be captured in statistical models. At any rate, it is these evaluations that would determine the earnings the suppliers of these programs would receive in the hypothetical competitive marketplace.

II. MEASURES OF SUBSCRIBER DEMAND, EVEN IF PROPERLY
REFLECTING PERCEIVED VALUE TO SUBSCRIBERS, ARE NOT
THEORETICALLY SOUND INDICES OF HOW MUCH CABLE OPERATORS
WOULD BE WILLING TO PAY FOR SUCH PROGRAMS.

Because a CSO's demand for programming is a derived demand based on the demands of potential subscribers, measures of subscriber demand are necessarily a step removed from the operator demands reflected in transactions with program services. As a result, attempts to measure the demands of viewers and subscribers cannot provide as accurate an assessment of what cable systems would be willing to pay for programs as measures that directly assess CSOs' valuations of these programs.

The extent to which otherwise equally accurate measures of viewer preferences among programs will differ from measures of cable systems' demands for these programs is a function of the manner in which viewer demands are aggregated by CSOs and program services such as over-the-air television stations and cable networks. It is important to recognize that cable system operators contract with program services for the supply of pre-programmed channels. Distant signal programs are components of program bundles (broadcast station schedules) that CSOs then incorporate in larger bundles of channels that are sold as service packages to subscribers. A consequence of this bundling process is that it is unlikely that information about subscriber willingness to pay for

various types of programs individually on distant signals would accurately reflect the value of those programs to cable systems.

Cable system operators create bundles of channels to aggregate the demands of viewers with very different preferences among the bundled channels in such a way that more of what individual subscribers would be willing to pay for the channels (and programs) provided can be collected than would be possible if the components were priced and sold individually. As the following example shows, the way in which subscriber demands are aggregated through bundling makes viewer "avidity" measures inherently unreliable as guides to the relative market values of different types of programs.

Consider a cable system serving two types of subscribers, type 1's and type 2's, that must fill two vacant channels with two of three types of programming -- Sports, News, and Weather. Type 1 subscribers are serious sports fans with a moderate interest in weather and only slight interest in news. Type 2 subscribers are less avid sports fans who value news nearly as much as sports and have only a slight interest in weather. The amount each subscriber would be willing to pay for a channel with each type of program if it were sold by itself is shown in Table 1.

Table 1
SUBSCRIBERS' WILLINGNESS TO PAY FOR INDIVIDUAL PROGRAMS

-6-

Programming	Type 1 Subscriber	Type 2 Subscriber
Sports	14	8
News	4	7
Weather	7	4

For the sake of simplicity, assume there is one of each type of subscriber and the system offers Sports and News. It is easy to see that the system's revenues are higher if it sells Sports and News as a bundle for a single price than if it prices and sells individually any two of the three program services. If News and Sports are sold individually, the system can produce revenue of at most 24, by selling Sports for 8 and News for 4. At these prices, each subscriber would purchase both channels. However, if the system packages News with Sports and sells the two as a bundle for 15, both subscribers will again buy the package, but revenue is increased to 30. Similarly, the cable system could earn 24 by selling Sports and Weather individually if it priced Sports at 8 and Weather at 4. On the other hand, selling Sports and Weather as a bundle would not increase system

If the system were to price the channels at their respective maximum values, it would sell one Sports channel to Subscriber 1 for 14, and one News channel to Subscriber 2 for 8, for a total revenue of 22.

revenues because the maximum price for the bundle is Subscriber 2's aggregate valuation of 12.

While simple, this example illustrates the analytical points made above regarding the pitfalls of measuring viewers' preferences for programs to gauge how much cable system operators would be willing to pay for them. measured by viewer valuations, News and Weather would appear to be equally valuable to the cable system because each is worth 4 to one of the viewers and 7 to the other. Yet their contributions to the revenue the system can earn are vastly different because News bundled with Sports is worth much more than Weather bundled with Sports, and the News-Sports bundle substantially increases the revenue the system can earn relative to what is possible with two channels sold independently. Measures of viewer "avidity" can pick up neither the synergies realized through bundling nor the possibility that programs with similar avidity ratings may make dramatically different contributions to the bundles of programs and channels sold by cable systems.

While it is the case that CSO and cable subscriber surveys presented to the Copyright Royalty Tribunal in the past showed somewhat similar overall rank-order value assignments by CSOs and subscribers, the two types of surveys do produce different allocations of value among different

types of programs. Therefore, in comparing the two types of surveys it is important to remember that from an analytical perspective, the two approaches are not close substitutes for each other. Because CSOs are the purchasers in the relevant marketplace and subscriber demands are filtered through them, the CSO survey results must be considered more primary and as more directly relevant to the determination of appropriate compensation than the subscriber surveys.

III. MEASURES OF SUBSCRIBER VIEWING SHARES HAVE LITTLE, IF ANY, VALUE AS INDICATORS OF PROGRAM VALUE IN THE DISTANT SIGNAL MARKETPLACE.

Apart from measuring the activities of a group -subscribers -- that does not directly participate in the
cable distant signal marketplace, cable <u>viewing</u> share studies
say nothing about preference intensity (or viewer willingness
to pay for programs), which must be considered by CSOs in
assessing the demand for cable services. Audience measures
were developed to meet the needs of advertiser-supported
broadcast services. For services relying primarily on
advertiser support, audience size is a useful gauge of a
program's contribution to revenue and profits. But cable
systems do not benefit from advertising on distant signal
stations. Hence, viewing measures are irrelevant to the
value of distant signal programming to CSOs.

Moreover, studies measuring gross amounts of viewing say nothing about the value of a program to cable subscribers. This fact is illustrated by situations where cable operators cancel programming services with low viewing overall, but receive intense complaints from cable subscribers for whom the programming service was important.

Finally, viewing studies say nothing about the values of different types of programs as components of the program bundles cable systems sell to viewers. If anything, as discussed below, we would expect that the types of programs accounting for the largest fraction of the viewing audience on distant signals to have the least value to cable systems at the margin. Thus, a viewing measure based on gross percentage shares of household viewing hours would tend to provide results that are inversely correlated with the appropriate measures of the relative values of distant signal programs.

IV. LARGE-AUDIENCE PROGRAMS IN PLENTIFUL SUPPLY IN THE BROADCAST MARKETPLACE WILL TEND TO BE LESS HIGHLY VALUED IN THE CABLE MARKETPLACE.

The nature of competition among over-the-air broadcasters is such that the types of programs that draw the largest audiences are likely to be oversupplied relative to the benefits they provide viewers. The theoretical explanation for why advertiser-supported broadcasters tend to

oversupply the types of programs that appeal to the broadest segments of the mass audience is well known and has been understood at least since Peter O. Steiner wrote about it in 1952.² Steiner developed his economic model of programming strategy to explain the common observations that competing ad-supported broadcasters all seemed to provide the same types of programs and had very little diversity in their schedules, leaving audience demands for differentiated fare unfulfilled. Steiner's insight, which subsequent writers have built on,³ was that dependence on advertiser support biased broadcasters toward the supply of the types of programs that attract large audiences, even when other types of programs were valued more by viewers.

This bias in favor of mass appeal programs exists because advertisers pay broadcasters for the audiences they deliver, but not for the value viewers place on their programs. As a result, competing broadcasters may find it more profitable to carve up a large audience of, say, one million viewers for situation comedies by providing more and more indistinguishable look-alike comedies that do little to

Preferences, and the Workability of Competition in Radio Broadcasting." Ouarterly Journal of Economics 55: 194-223.

³ This literature is reviewed and extended in Chapters 3 and 4 of my book with Bruce M. Owen, <u>Video Economics</u>, Harvard University Press, 1992.

increase viewer satisfaction, than to provide opera for an audience of fifty thousand viewers who want to see opera very badly. New situation comedies will be provided instead of operas as long as their shares of the mass audience for sitcoms is larger than the audience for an opera -- even though the new comedies just cannibalize the existing sitcom audience and to viewers seem little different from situation comedies already available.

Elaborations on Steiner's model have shown that if there are enough competing broadcasters, eventually the audience for an additional mass appeal program will be so small that it will be just as profitable to provide the types of programs preferred by smaller, minority taste audiences; but the duplication of mass appeal programs will still occur. However, if the number of advertiser-supported broadcasters is too small, programs addressing minority preferences will not be provided.

The growth of cable networks has demonstrated that the number of over-the-air broadcasters is severely limited relative to the number of channels most viewers would like to have. The result is an over-the-air broadcast service dominated by mass appeal programs, while minority taste audiences don't get the programs they want, even though, if it were possible, they would bid some of the channels devoted

to mass appeal programs away from mass audience viewers who get little value from the marginal mass appeal programs. Cable operators respond to this willingness to pay for minority taste programming, which can't be expressed in the ad-supported television marketplace, by charging for and supplying the types of programs that are relatively undersupplied by over-the-air broadcasters.

In addition to its bias against the types of programs that small segments of the viewing population may value highly, advertiser-supported television is also biased against certain types of programs that most viewers may spend relatively little time watching, but still value highly.

News is probably the best example of this type of program.

News programs are valued for their regular coverage of the common run of news events that most people want to know about. But viewers also value news programs as sources of information of vital interest during emergencies, times of crisis, and other unpredictable events of general interest. Viewers value highly the assurance that news sources will be available with in-depth coverage during such periods. This value is reflected, for example, in what CSOs are willing to pay to include CNN in their basic cable packages. On a regional level, broadcast station news can be a critical and highly valued source of information during severe weather,

during important legislative debates, and state and local elections. But this source of value to viewers cannot possibly be reflected in viewing levels during normal periods.

News audiences skyrocketed during the Gulf War, and then returned to pre-war levels when the war ended. A similar pattern, though more prolonged, was observed during the early days of the Simpson trial and the arrest and legal maneuvering that preceded it. When viewers value program services such as news for their availability as sources of information about infrequent and unpredictable events of great interest, it makes no more sense to use audience size to measure their values to viewers than to measure the benefits of fire insurance policies to home owners by how frequently they make claims, while ignoring the value of the property insured.⁴

Cable importation of distant signals enhances the availability value of news coverage to cable viewers by making available broadcast news organizations in distant markets for which coverage otherwise would not be available

The fact that some goods and services have a significant "option value" over and above the benefits consumers realize from using them was first pointed out by Burton Weisbrod (1964), "Collective-Consumption Services of Individual-Consumption Goods," <u>Quarterly Journal of Economics</u>, Vol. 78, 471-477. See also, A. Kahn, <u>The Economics of Regulation</u>, Vol. II, Cambridge: MIT Press, 1988, pp. 236-241.

or would be much less complete. Networks have traditionally relied on bureaus in major markets to increase their ability to cover news events where and when they break. With increased use of satellite technology by stations as well as networks, the broadcast networks' news organizations and news networks like CNN have come increasingly to rely on newsfeed sharing arrangements with local stations to provide the types of coverage once provided by network news bureaus. Cable carriage of distant signals allows viewers to access these distant sources of news directly and in their most complete form.

The importance of factors other than audience size in determining the value of program services to cable systems is reflected by the fact that the amounts cable systems pay in per-subscriber fees for basic cable networks is not closely correlated with audience size for those networks. For example, the 1990, 1991, and 1992 average license fees per subscriber for ESPN and CNN were substantially higher than USA Network's license fee even though USA Network had higher average prime time ratings and, except for CNN's higher number in the Gulf War year of 1991, higher average 24 hour ratings than either ESPN or CNN.

In sum, economic theory predicts and the behavior of cable system operators demonstrates that the syndicated

series which are supplied in great quantities in the advertising-supported marketplace and account for the largest share of time spent viewing distant signals would likely receive a share of the total compensation in a free distant signal marketplace that is much smaller than their share of viewing audience. Conversely, one would expect the news programs on distant signals to have much greater value to cable system operators than would be reflected in their viewing shares.

PUBLIC VERSION

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BOOKS

INTERNATIONAL TRADE IN FILMS AND TELEVISION PROGRAMS, with Stephen E. Siwek, Ballinger, 1988.

VIDEO ECONOMICS, with Bruce M. Owen, Harvard University Press, 1992.²

ELECTRONIC SERVICES NETWORKS: A BUSINESS AND PUBLIC POLICY CHALLENGE, co-edited with Margaret E. Guerin-Calvert, 1991, Praeger Publishers.²

JOURNAL ARTICLES

- 1. "A Note on Measuring Surplus Attributable to Differentiated Products," <u>Journal of Industrial Economics</u>, September, 1984.
- 2. "Economic Consequences of the Informational Characteristics of Mass Media," The American Economist, Spring 1981.
- 3. "Selecting Advanced Television Standards for the United States: Implications for Trade in Programs and Motion Pictures," <u>Journal of Broadcasting and Electronic Media</u>, Spring, 1991.
- 4. "The Privatization of European Television: Effects on International Markets for Programs," <u>Columbia Journal of World Business</u>, December 1987.
- Toward a New Analytical Framework for Media Policy:
 Reconciling Economic and Non-Economic Perspectives," with R.
 Entman, <u>Journal of Communication</u>, Winter 1992. Reprinted in part in <u>Taking Sides</u>: <u>Clashing Views on Controversial Issues In Mass Media and Society</u>, A. Alexander and J.
 Hanson, eds., The Duskin Publishing Group, Inc., 1993.
- 6. "Funding the Public Telecommunications Infrastructure," with B. Egan. <u>Telematics and Informatics</u>, Fall 1994.²

Senior author.

² Equal joint author.

- 7. "Network Programming and Off-Network Syndication Profits: Strategic Links and Implications for Television Policy," with K. Robinson. Forthcoming in the <u>Journal of Media Economics</u>.
- 8. "Trade Liberalization and Policy for Media Industries," forthcoming in the <u>Canadian Journal of Communication</u>.
- 9. "Network Competition and the Provision of Universal Service," with John C. Panzar, forthcoming in <u>Industrial and Corporate Change.</u>²

BOOK CHAPTERS

- 1. "Electronic Services Networks: Functions, Structures, and Public Policy," with Margaret E. Guerin-Calvert, Forthcoming in Electronic Services Networks: A Business and Public Policy Challenge, Margaret E. Guerin-Calvert and Steven S. Wildman, eds., Praeger Publishers, 1991.
- 2. "Program Competition and Diversity in the New Video Industry," with Bruce M. Owen in <u>Video Media</u> <u>Competition: Regulation, Economics, and Technology</u>, Eli M. Noam, ed., Columbia University Press, 1985.
- 3. "The Economics of Industry-Sponsored Search Facilitation" in Electronic Services Networks: A Business and Public Policy Challenge, Margaret E. Guerin-Calvert and Steven S. Wildman, eds., Praeger Publishers, 1991.
- 4. "The Economics of Trade in Recorded Media Products in a Multilingual World: Implications for National Media Policies," with Stephen E. Siwek, in The International Market in Film and Television Programs, Eli M. Noam ed., Ablex, 1993.
- 5. "Investing in the Telecommunications Infrastructure: Economics and Policy Considerations" with Bruce L. Egan. Forthcoming in the 1992 Annual Review of the Institute for Information Studies. 2
- 6. "One-Way Flows and the Economics of Audiencemaking," in Audiencemaking: How the Media Create the Audience, J.S. Ettema and D.C. Whitney eds., Sage, 1994.
- 7. "Information Technology, Private Networks, and Productivity," Forthcoming in <u>Private Networks and Public Objectives</u>, E. Noam, ed.,

PAPERS IN PUBLISHED CONFERENCE PROCEEDINGS

- 1. "Controlling Occupational Radiation: Alternatives to Regulation," with Sagan, L.A. and Squitieri, R. Presented at the International Symposium on Occupational Radiation Exposure in Nuclear Fuel Cycle Facilities, Los Angeles, CA, June 18-22. Published in proceedings of same conference.
- "Economic Issues in Mass Communication Industries," with Rosse, J.N., Dertouzos, J.N. and Robinson, M. Presented at the FTC Symposium on Media Concentration, Washington D.C., December 14, 15, 1978. Published in the proceedings of same conference.
- 3. "Vertical Integration in Broadcasting: A Study of Network Owned-and-Operated TV Stations," S.I.E. no.97, Department of Economics, Stanford University, also published in the Proceedings of the FTC Symposium on Media Concentration, Washington, D.C., December 14, 15, 1978.
- 4. "Communication Technology and Productivity: The Role of Education," in the <u>Annual Review of Communication</u>, National Engineering Consortium, Vol.XXXXVII (1993-94).

OTHER PUBLICATIONS AND WORKING PAPERS

- "A Model of Supply and Demand for Information in a Competitive Market," October 1989.
- 2. "A Spatial Model of Entry Deterrence," S.I.E. No 103, Department of Economics, Stanford University, November 1978, revised December 1980.
- 3. "Advertising, Consumer Learning, and Competitive Strategies," Dissertation filed January 1980. Also published as S.I.E. paper No. 110 by Department of Economics, Stanford University, December 1979.
- 4. "An Empirical Study of Broadcast Competition to Cable," with James N. Dertouzos, July 1990.²
- 5. "Anticipated Preemption and the Determination of Initial Structure in a Growing Market," UCLA Working Paper No. 267, September 1982.

³ Joint author credited as a "with."

- 6. "ATV Standards and Trade in Recorded Video Entertainment," paper presented at the Sixteenth Annual Telecommunications Policy Research Conference, October 30-November 1, 1988, Airlie, VA. Revised April, 1989.
- 7. "Competition, Regulation and Sources of Market Power in the Radio Industry," with Duncan J. Cameron, May 1982, revised October 1989.1
- B. "Competition in the Local Exchange: Appropriate Policies to Maintain Universal Service in Rural Areas", with John C. Panzar, September 1993.
- "Program Choice in a Broadband Environment," with Nancy Y. Lee. Working paper, Center for Telecommunications and Information Studies, Columbia University, May 1989.
- 10. "Recruiter Incentives: Effects on Performance," Rand Corporation Working Draft, April 1983.
- 11. Review of <u>The World Television Industry: An Economic Analysis</u>, by Peter Dunnett in the <u>Journal of Communication</u>, Winter 1992.
- 12. Review of Oligopoly Theory, by James Friedman in the <u>Journal</u> of Economic Literature, March, 1985.
- 13. "Trade in Films and Television Programming," with Stephen E. Siwek. Presented at Trade in Services and Uruguay Round Negotiations, London, England, July 8, 1987 and Geneva, Switzerland, July 18, 1987.
- 14. Review of <u>Television in Europe</u> by Eli Noam, <u>Journal of Economic Literature</u>, December, 1993.

OTHER PROFESSIONAL ACTIVITIES

Co-convener, day-long Washington, D.C. conference on electronic services networks sponsored by the Annenberg Washington Program, February 23, 1990.

Convener, half-day conference on electronic services networks at Northwestern University, April 9, 1990.

Co-convener, conference on telecommunications free trade zones, Northwestern University, March 30, 1992. Sponsored by the Annenberg Washington Program of Northwestern University and the Illinois Commerce Commission.

Member, Editorial Board, Journal of Media Economics.

Member of Organizing Committee for the Nineteenth and Twentieth Annual Telecommunications Policy Research Conference, Solomon Island, MD.

Member, Executive Committee, Consortium for Research in Telecommunications.

REFEREEING, REVIEWING, AND EDITORIAL SERVICE

American Economic Review (referee)

Communication Research (referee)

Journal of Communication (book reviewer)

Information, Economics and Policy (referee)

Journal of Economic Literature (book review)

Journal of Industrial Economics (referee)

Journal of Media Economics (editorial board, referee)

National Science Foundation (proposal reviewer)

The Rand Journal of Economics (referee)

TESTIMONY

Written testimony on behalf of CBS Inc. before the Federal Communications Commission in the 7-7-7 proceedings, Gen. Docket No. 83-1009 (1984).

Testimony on behalf of calculator manufacturer before the International Trade Commission, Docket No. 337-TA-198 (1985).

Written testimony on behalf of CBS Inc. before the FCC in its consideration of the Applications of TBS Inc. for transfer of control of CBS Inc. (1985).

Testimony on behalf of the National Association of Broadcasters before the Copyright Royalty Tribunal, Docket No. CRT 84-1-83CD (1985).

Testimony on behalf of paging applicant before the Massachusetts Department of Public Utilities, Docket No. 86-213 (1987).

Written testimony on behalf of the National Cable Television Association, Inc. before the FCC in the matter of Amendment of parts 1.63 and 76 of the Commission's Rules to Implement the Provision of the Cable Communications Policy Act of 1984, MM Docket No. 84-1296, (December 1987).

Written testimony on behalf of the National Cable Television Association, Inc. before the FCC in the matter of competition, rate deregulation and the Commission's policies relating to the provision of Cable Television, MM Docket No. 89-600, (February 1990).

Written testimony on behalf of the National Cable Television Association, Inc. before the FCC in the matter of competition, rate deregulation and the Commission's policies relating to the provision of Cable Television, MM Docket No. 89-600, (May 1990).

Written testimony on behalf of Telephone and Data Services, Inc. before the FCC in the matter of Amendment of the Commission's Rules to Establish New Personal Communication Services, GEN Docket No. 90-314, ET Docket No. 92-100, (November 1992).

Written testimony on behalf of Ameritech before the FCC in the matter of a Petition for a Declaratory Ruling and Related Waivers to Establish a New Regulatory Model for the Ameritech Region, (April 1993).

Written testimony on behalf of Viacom International Inc. before the FCC in the matter of implementation of sections of the Cable Television Consumer Protection and Competition Act of 1992: Rate Regulation, MM Docket 92-266, (June 1993).

Testimony on behalf of Blue Valley Telephone Company and other petitioners before the Kansas State Corporations Commission In the Matter of a General Investigation into Competition within the Telecommunications Industry in the State of Kansas, Docket No. 190-492-U 94-GIMT-478-GIT, (November 1994).

Written testimony on behalf of INTV, King World and Viacom before the FCC in Review of the Prime Time Access Rule, Section 73.658(k) of the Commission's Rules, MM Docket No. 94-123, March 7, 1995.

1.1.

Before the COPYRIGHT OFFICE LIBRARY OF CONGRESS Washington, D.C. 20540

In the Matter of 1990, 1991, and 1992 Cable Royalty Distribution Proceedings

Docket No. 94-3 CARP-CD90-92

DECLARATION

I, Steven S. Wildman, declare under penalty of perjury that the Statement of Steven S. Wildman presented in the 1990-1992 Cable Copyright Royalty Distribution Proceeding is true and correct to the best of my knowledge, information and belief.

Steven S. Wildman

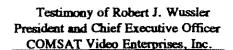
Dated: August 15, 1995

COMSAT

Robert J. Wussier President and Chief Executive Officer

COMSAT Video Enterprises

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1. Qualifications

Since September 1989 I have been President and Chief Executive Officer of COMSAT Video Enterprises, Inc. (CVE), a wholly-owned subsidiary of the Communications Satellite Corporation (COMSAT). CVE is the largest provider of satellite-delivered entertainment services to the U.S. lodging industry, and is engaged in sports and entertainment program acquisition, broadcast services, High Definition Television and Direct Broadcast Satellite development.

Prior to joining CVE, I served as Executive Vice President of Turner Broadcasting System, Inc. (Turner Broadcasting) from 1980 to 1987 and Senior Executive Vice President from 1987 to 1989. I also was a member of the Turner Broadcasting Board of Directors and executive committee, and held the position of President of Superstation WTBS.

Turner Broadcasting is a diversified entertainment company which owns and operates four programming services delivered to cable systems, home satellite dish owners and SMATV systems via satellite: (1) the Superstation WTBS, which is and has been for several years the most widely-carried distant signal; (2) the Cable News Network (CNN); (3) Headline News; and (4) Turner Network Television (TNT). Turner Broadcasting also is engaged in the business of syndicating feature films and television programming. Included within its library are more than 3,700 feature-length motion pictures (obtained as a result of Turner Broadcasting's acquisition of MGM/UA Entertainment Company in 1986), as well as a number of cartoon episodes, short subjects, television series and made-for-television movies. In addition, Turner Broadcasting owns the Atlanta Braves major league baseball club, and holds a limited partnership interest in the Atlanta Hawks professional basketball team.

During my tenure with Turner Broadcasting, I was involved in virtually every aspect of WTBS' daily operation, including the development and acquisition of programming for WTBS and the marketing of the superstation to cable operators. My responsibilities also required me to be generally familiar with the operations of other program services with which WTBS competed (such as other cable networks and superstations), as well as the cable television, broadcast, sports and syndication industries.

I spent 21 years with CBS, starting in the mail room and eventually becoming President of CBS Television Network and CBS Sports. I also have been active in several industry organizations. For example, I have served as Chairman of the Board of the National Academy of Television Arts and Sciences; Secretary to the Board of Governors of the National Cable Television Association (NCTA); Chairman of the NCTA National Satellite Network Committee; and Chairman of the NCTA Programming Conference. In addition, I have been a member of the Board of Governors of the National Academy of Cable Programming; the Board of Advisors of the Cable Television Public Affairs Association; and the Executive Committee of the Cable Television Advertising Bureau.

I received the NCTA President's Award in 1983 and Associate's Award in 1986. I also have received five Emmy Awards, four Awards for Cable Excellence and two international sports awards.

2. Opinion Concerning Distant Signal Program Values

The Joint Sports Claimants (Major League Baseball, National Basketball Association, National Hockey League and National Collegiate Athletic Association) have asked that I offer the Tribunal my opinion concerning the relative value of the non-network sports and syndicated programming on WTBS and other distant signals carried by cable in 1989.

I am aware that in the cable royalty distribution proceedings for 1978 through 1983, the copyright owners of syndicated movies, series and shows received from the Tribunal approximately 70 percent of the cable royalty funds. I also am aware that the copyright owners of live professional and college sports programming received less than one-quarter of the syndicators' award, or approximately 15-17 percent. I am advised that these awards were tied largely to the amount of distant cable "viewing" generated by each program category (that is, the number of hours that each program aired multiplied by the average number of cable households watching that program).

It is my opinion that the Tribunal's awards in the 1978-83 proceedings do not reflect the relative values that the cable industry placed upon distant signal non-network sports programming, movies, series and shows during those years. In my opinion, the Tribunal's past awards undercompensated the owners of live sports programs and overcompensated the suppliers of syndicated programs, based upon the comparative worth of these programs to the cable industry. I believe that, for the year 1989, the sports interest are entitled to a share of cable royalties which more closely approximates the share allocated to syndicators — again, based on the comparative worth of these programs to the cable industry.

3. Discussion

There are several factors which help explain the importance that the cable industry has attached to live sports programming -- its uniqueness and originality; the fact that it is truly first-run; its relatively limited availability; its topical nature; its promotability; the loyalty of its followers. Because of these

factors, live sports programs are critically important to the cable industry's principal objective -- convincing consumers to subscribe to, and to continue paying \$15 to \$30 per month for, cable service. They are more important than syndicated movies and programs which typically do not appear on distant signals until after having had multiple runs in other media.

It is, of course, difficult to quantify these factors and to accord relative dollar values to the different types of non-network programs on distant signals. However, based on my experience in programming WTBS and marketing the superstation to cable operators, I believe that sports programming has a relative value significantly greater than that reflected in "viewing" data or past Tribunal awards.

The marketplace value of a program package can be seen in the amounts paid to acquire that programming from independent sources. The level of licensing fees may be quite different than the amount of "viewing" which the program generates.

For example, in December 1989 Turner Broadcasting agreed to pay Columbia Pictures Television approximately \$10 million for the rights to televise 1,000 feature films during the years 1990-98 on WTBS and TNT. This was the largest movie package ever licensed from a single Hollywood studio in the history of basic cable. The package, which included many popular titles such as "Kramer vs. Kramer," "The Big Chill," "Tootsie," and "To Sir With Love," will give Turner some 14,000 thousand hours of programming over a nine-year period (assuming 7 runs per title).

At approximately the same time that it closed the Columbia deal, Turner Broadcasting agreed to pay the NBA a total of \$275 million for the rights to televise up to 320 NBA games (about 800 hours) during 1990-94 on TNT. In other words, the amounts that Turner Broadcasting pays to televise the NBA games will be nearly 30 times greater than the amounts paid to televise the Columbia movie package — even though that movie package will likely generate much greater "viewing" over the run of the contract.

It might be noted that much of the programming on WTBS in 1989 consisted of older off-network shows such as the "Beverly Hillbillies," "Gilligan's Island," "Brady Bunch," "Andy Griffith," "Leave It To Beaver," "Perry Mason," "Sanford & Son" and "Bewitched." Programs such as these, although they were popular and likely generated significant "viewing," were relatively inexpensive to obtain.

Consider also the amounts that WTBS received from the sale of advertising on sports programming. Major sports programming (Braves baseball, NBA basketball and SEC football) generated a significant portion of WTBS' total ad revenues in 1989, even though it accounted for a relatively small amount of broadcast time. Even those revenues did not reflect the full value of sports programming to WTBS.

For example, it does not take into account the significant promotional value of the sports programming. In 1989, a significant amount of WTBS'

advertising expenditures and promotion opportunities (including those on its sister networks of TNT, CNN and Headline News) related to Braves baseball, NBA basketball and SEC college football.

The reason for the emphasis on sports is easy to understand. A principal goal of WTBS is to gain access to as many cable systems as possible. We were, of course, quite successful in doing this; by 1989, WTBS reached some 93 percent of the nation's cable households. The sports programming on WTBS was and remains a key ingredient in convincing cable operators to carry the superstation. Indeed, Ted Turner recognized early on that sports programming would be key to the success of WTBS as a superstation, and thus he purchased the Braves shortly after acquiring WTBS in 1970. (Other superstation interests have recognized the same, e.g., Tribune (WGN/Cubs) and Gaylord (KTVT/Rangers)). Turner's ownership of the Braves assures WTBS of an important block of programming. It also ensures that this programming is available at a cost considerably less than outside licensing.

Proof of Delivery

I hereby certify that on Monday, August 26, 2019, I provided a true and correct copy of the Written Rebuttal Testimony of Joint Sports Claimants Vols. II-III - PUBLIC to the following:

MPAA-represented Program Suppliers, represented by Gregory O Olaniran, served via Electronic Service at goo@msk.com

Motion Picture Association of America (MPAA)-Represented Program Suppliers, represented by Lucy Plovnick, served via Email

Devotional Claimants, represented by Clifford M Harrington, served via Electronic Service at clifford.harrington@pillsburylaw.com

Spanish Language Producers, represented by Brian D Boydston, served via Electronic Service at brianb@ix.netcom.com

SESAC, Inc., represented by John C. Beiter, served via Electronic Service at jbeiter@lsglegal.com

Major League Soccer, LLC, represented by Edward S. Hammerman, served via Electronic Service at ted@copyrightroyalties.com

Settling Devotional Claimants, represented by Jessica T Nyman, served via Electronic Service at jessica.nyman@pillsburylaw.com

Multigroup Claimants, represented by Brian D Boydston, served via Electronic Service at brianb@ix.netcom.com

Broadcaster Claimants Group, represented by Ann Mace, served via Electronic Service at amace@crowell.com

Broadcast Music, Inc. (BMI), represented by Jennifer T. Criss, served via Electronic Service at jennifer.criss@dbr.com

National Public Radio, Inc. (NPR) (submitted comment), represented by Gregory A Lewis, served via Electronic Service at glewis@npr.org

American Society of Composers, Authors and Publishers (ASCAP) and Broadcast Music, Inc. (BMI), represented by Samuel Mosenkis, served via Email

American Society of Composers, Authors and Publishers (ASCAP), represented by Sam Mosenkis, served via Electronic Service at smosenkis@yahoo.com

Signed: /s/ Michael E Kientzle